



Nonpoint Source
P R O G R A M



Louisiana Nonpoint Source Annual Report

Federal Fiscal Year (FFY) 2014



Table Of Contents

1.0 Executive Summary	6
1.1 NPS Outreach and Education Activities	7
1.2 Watershed Signs	11
2.0 Water Quality Improvement	14
2.1. Success Stories	14
3.0 NPS Funding	18
4.0 Training.....	22
4.1 Soil and Water Assessment Tool (SWAT) Model Training	22
4.2 SPARROW Model Training	22
4.3 Spreadsheet Tool for Estimating Pollutant Load (STEPL) Model Training	22
5.0 Coordination with Partners	24
5.1 USDA Initiatives	24
5.2 LDEQ's Nonpoint Source and Water Surveys' Units Join Forces to Streamline Sampling.....	26
5.3 LDEQ/LDAF/USDA-NRCS Plan for Success	29
5.4 Louisiana Nutrient Management Strategy Update.....	30
5.5 A State Plan for Prioritizing Watersheds for Restoration and Protection in Louisiana	31
5.6 Watershed Coordinators	32
6.0 Meeting NPS Milestones	38
6.1 LDAF BMP Implementation	39
7.0 Highlighted Activities in Priority Watersheds.....	42
7.1 Big Creek Watershed (subsegment 040703)	42
7.2 Bayou Queue de Tortue Watershed (subsegment 050501).....	43
8.0 Statewide Programs	46
8.1 Coastal Nonpoint Pollution Control Program (CNPCP)	46
8.2 Drinking Water Protection Program	51
8.3 Source Water Assessment Program	56
8.4 Statewide Individual Home Sewage System Program	56
9.0 Appendix	62

Figures

Figure 1.	Educating future Walnut Bayou™, a water quality model which uses crushed walnut shells to simulate soil, is often featured at NPS Unit outreach events. It was designed and built by an LDEQ Senior Scientist. Water-related concepts and scenarios which can be demonstrated by the model are only limited by the imagination. Above, “Monopoly” houses and hotels have been safely located on higher ground, nestled between trees which are plastic vegetation for aquariums. A barrier of insulated electrical wiring has been placed as a barrier against the inevitable flow of water.....	7
Figure 2.	This model allows participants the opportunity to get their hands “dirty” while observing the effects of water on pollutants and the landscape. The participants are now removing the houses and barriers, which were disturbed by the flow of water (controlled by the exhibitor through a submersible pump below the model and valves at the top of the model) as the exhibitor talks about the role of water on a landscape.....	8
Figure 3.	NPS Unit members typically bring an assortment of promotional and educational items and literature to outreach events; these colorful items are very popular with the public, both young and old	9

Figure 4.	DEQ's Be the Solution! campaign is emphasized in our outreach work. The idea behind this campaign is that each citizen can be part of the solution to pollution of Louisiana's waters by performing simple tasks such as recycling oil, bagging pet waste, using less fertilizer and pesticides, mulching or bagging grass clippings, and not littering.....	10
Figure 5.	A sign located in the Big Creek Watershed.....	11
Figure 6.	DEQ Employees Guy LaFleur (left) and Derek Borne (right) conducting water quality sampling from a bridge. Guy LaFleur is lowering an in-situ (in place) probe into the water to capture water quality parameters such as pH, conductivity, salinity, temperature and dissolved oxygen, while Derek Borne lowers a water sampler into the water to collect water samples to bring to the lab for analysis	26
Figure 7.	Former DEQ employee Zach Herrington conducting a stream discharge using a "wading" flow measurement device called a Flowtracker. A measuring line is stretched across the stream to allow for incremental measurements across the width of the stream at the sample site	26
Figure 8.	Shown is the "hand-held" FlowTracker device used in conducting "wading" flows in streams and bayous that can be waded	26
Figure 9.	Shown here is the DEQ warehouse facility in Port Allen where Water Surveys and other DEQ sections store boats and equipment used in assessing Louisiana's water bodies	26
Figure 10.	Pictured above is one of DEQ's shocking boats used to collect biological fish data. Shocking the fish at the proper frequency and voltage allows DEQ scientists to temporarily stun fish so that they can be measured, identified, and then released.....	27
Figure 11.	DEQ employee Hannah Everritt working with survey equipment which will be used to measure stream channels	27
Figure 12.	DEQ employees launching a boat prior to collecting water quality and flow measurements on a south Louisiana bayou.....	28
Figure 13.	DEQ employee conducting a flow measurement by boat on a south Louisiana bayou using a Doppler flow measurement device called the RiverRay Acoustic Doppler Current Profiler (ADCP). Flows can be done at stations along a cross section of a stream or bayou, or they can be done by floating the device back and forth across the stream to take readings.....	28
Figure 14.	DEQ employee Robert McGuire being trained on DEQ's "backpack", portable shocking unit, which is used to collect fish data similarly to the way a boat shocking unit works, but in streams that are shallow enough to wade.....	28
Figure 15.	Coming Soon: Touchscreen field tablets with the customized software.....	28
Figure 16.	Staff explain NPS pollution to Senator Mary Landrieu at the Wild Things Festival in Lacombe, LA	46
Figure 17.	Winners of the 14th Annual Storm Water Poster and Essay Contest	46
Figure 18.	Priority Watershed Subsegments Located Outside of MS4 Areas	49
Figure 19.	Potentially Impaired Areas of Interest for Total Suspended Solids.....	49
Figure 20.	Venice Marina in Plaquemines Parish	50
Figure 21.	LDEQ Geologist Tiffani Barth teaching the East Ascension High School Science Club where their water comes from, why it is important to protect it and how they can protect it	52
Figure 22.	Jesse Means (LDEQ) and James Hendrix (LSU Cooperative Extension Service) prepare for water sampling on Lake Bruin.....	54
Figure 23.	LDEQ Geologist Jesse Means prepares a field blank for a sampling event on Lake Bruin	54
Figure 24.	Fecal coliform results from three (3) sample events in May of 2014	55
Figure 25.	Optical brightener results from three (3) sample events in May of 2014	55
Figure 26.	LDEQ Geologist Jesse Means at the smoke test in Donaldsonville that was conducted to pinpoint a source of sewage getting into Bayou Lafourche.....	59

Tables

Table 1.	Watersheds in which water quality monitoring was conducted in FFY 2014	18
Table 2.	WIPs developed by WSCs.....	18
Table 3.	WIPs and SAPs developed by NPS staff	19
Table 4.	Watersheds with CP Implementation.....	19
Table 5.	Description of Section 319 Grant Expenditures	19
Table 6.	USDA – Mississippi River Basin Initiative	24
Table 7.	USDA - National Water Quality Initiative.....	25
Table 8.	USDA - Gulf of Mexico Initiative	25
Table 9.	LDEQ, LDAF and USDA-NRCS Plan for Success	29
Table 10.	Water bodies included planning (P), assessment (A), monitoring (M) and implementation	38
Table 11.	CPs Implemented in Each Watershed.....	39
Table 12.	Conditions in GPs.....	47
Table 13.	Features of interest by category	50
Table 14.	Louisiana's standard criteria for fecal coliform.....	56
Table 15.	Proposed individual home sewage system project for FFY 2015.....	58



1.0 Executive Summary

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Executive Summary

The State of Louisiana's federal fiscal year (FFY) 2014 Nonpoint Source (NPS) Annual Report has been prepared in compliance with Section 319 of the Clean Water Act (CWA). This report outlines progress made by the State of Louisiana in protecting and restoring watersheds impacted by NPS pollution. Sources of NPS pollution include agricultural production, forestry, sand and gravel mining, urban storm water runoff, construction, and individual home sewerage systems. The NPS program in Louisiana is administered by the Louisiana Department of Environmental Quality (LDEQ), but partners with Louisiana Department of Agriculture and Forestry (LDAF) and many other agencies and organizations on NPS activities. These activities include the development of statewide water quality goals, establishing a prioritization framework for watershed planning and implementation, watershed evaluation, and reporting.

LDEQ, LDAF and United States Department of Agriculture – National Resources Conservation Service (USDA-NRCS) worked together to improve the process of restoring and protecting watersheds. Improvements made to the priority watershed selection process include the addition of an agricultural assessment and a strategic assessment plan (SAP). The SAP includes the rapid water quality assessment (RWQA), which aids in the development of the watershed implementation plan (WIP) and the strategic targeting of conservation practices (CPs), improving effectiveness. Overall these changes improve efficiency, effectiveness and reduce lag time for restoring watershed. LDEQ presented this plan for success at the NPS National Conference in Dallas on November 19, 2014.

Louisiana received approval from the United States Environmental Protection Agency (USEPA) to develop an Umbrella Quality Assurance Project Plan (UQAPP). The UQAPP contains required monitoring standards to ensure proper protocols are followed for each watershed. The UQAPP enables LDEQ NPS staff to draft shorter sample plans containing information pertinent to each watershed, in FFY 2014 twelve sample plans were approved.

In an effort to assist watershed planning, implementation, and monitoring LDEQ developed maps using the Watershed Delineator from the ArcGIS Soil and Water Assessment Tool (ArcSWAT) for 13 watersheds. The software delineates micro-watersheds based on hydrology and on Rapid Water Quality Assessment locations used as outlets. These maps were used by LDEQ, LDAF and USDA-NRCS to determine potential critical areas to target for CP implementation and to establish long term monitoring sites. LDEQ published 217 maps in support of NPS projects.

NPS Program Highlights

- NPS staff attended 16 outreach and educational events;
- 305 watershed signs were purchased and distributed across the state;
- 324,478 pounds of nitrogen, 113,961 pounds of phosphorus and 39,576 tons of sediments were reduced through agricultural CP implementation;
- Three (3) success stories were approved by USEPA as qualifying for three (3) WQ-10 measures;
- LDEQ and LDAF applied for and was granted a total of \$3,697,000 federal dollars in the FFY 2014 work plan;
- LDEQ/LDAF NPS staff received training in SWAT, Spreadsheet Tool for Estimating Pollutant Load (STEPL) and SPARROW models;
- LDEQ, LDAF and USDA-NRCS continues partnering in watersheds prioritized through USDA's Mississippi River Basin Initiative (MRBI)/National Water Quality Initiative (NWQI)/Gulf of Mexico Initiative (GoMI);

- LDEQ's NPS and water surveys (WS) units join forces to streamline sampling;
- Louisiana's nutrient management strategy (NMS) team focused on implementation of the state's strategy;
- LDEQ's Assessment and NPS staff collaborated to develop Louisiana's prioritization framework;
- LDEQ NPS partnered with USEPA Trash Free Waters program to reduce trash in Louisiana's watersheds;
- LDEQ continued watershed planning and implementation activities with six (6) watershed coordinators (WSCs);
- Louisiana continues to focus on watershed planning, assessment, monitoring and implementation in 23 watersheds;
- In partnership with Louisiana Department of Natural Resources (LDNR), LDEQ responded to comments from USEPA and National Oceanographic and Atmospheric Administration (NOAA) on Louisiana's Coastal Nonpoint Pollution Control Program (CNPCP);
- LDEQ's Drinking Water Protection (DWP) program implemented activities in Allen Ascension, Caldwell, Livingston and St. Mary parishes;
- Statewide individual home sewage system program initiated;
- LDEQ reviewed 220 Solicitation of Views to ensure NPS compliance issues were addressed; and
- LDEQ published monitoring data in USEPA's Storage and Retrieval (STORET) Data Warehouse for 15 watersheds.

1.1 NPS Outreach and Education Activities

LDEQ attended 16 outreach and educational events this fiscal year that spanned the entire state. LDEQ used an array of methods to educate the public on NPS issues. Two (2) of our educational interactive models used were Enviroscope and Walnut Bayou. Enviroscope visually demonstrates how water can be transported through various landscapes, from urban to agricultural, illustrating the interconnectedness of our waterways and the transportation of nonpoint source pollution. Walnut Bayou is a model created in house that is used to explain the movement of water and the corresponding geomorphological alterations that result from this movement. Using these models, students are asked to think about and predict how the water moves through various substrates and how that affects the transportation of nonpoint source pollution. In FFY 2014, LDEQ reached 1,000's of adults and students through the following events and expos.



Figure 1. "Walnut Bayou", a water quality model which uses crushed walnut shells to simulate soil, is often featured at NPS Unit outreach events. It was designed and built by an LDEQ Senior Scientist. Water-related concepts and scenarios which can be demonstrated by the model are only limited by the imagination. Above, "Monopoly" houses and hotels have been safely located on higher ground, nestled between trees which are plastic vegetation for aquariums. A barrier of insulated electrical wiring has been placed as a barrier against the inevitable flow of water.



Figure 2. This model allows participants the opportunity to get their hands “dirty” while observing the effects of water on pollutants and the landscape. The participants are now removing the houses and barriers, which were disturbed by the flow of water (controlled by the exhibitor through a submersible pump below the model and valves at the top of the model) as the exhibitor talks about the role of water on a landscape.

October 22, 2013

Ocean Commotion, hosted by the Louisiana Sea Grant College program, gives students the chance to learn about the aquatic ecosystems Louisiana’s citizens are so dependent upon. This event is attended by approximately 2,500 K- 8th grade students from around the state. There were over 60 exhibitors’ present, representing vital aspects of Louisiana’s ecosystems.

October 31 - November 2, 2013

The 2013 Louisiana Science Teachers Association conference was held in Baton Rouge. This organization of Louisiana science educators is dedicated to the advancement of scientific literacy at all levels. The theme of this annual conference was “The New Frontier: Next Generation Science Standards.” LDEQ staff presented to approximately 200 educators.

November 6-7, 2013

The Chem Friends Expo was held in Gonzales. The three (3) day expo was a science exhibition for approximately 1,800 sixth grade students that allowed organizations to interact with students and offer hands-on instruction on a specific chemistry process. LDEQ’s demonstration was based on “kitchen chemistry.” Various chemicals found in the kitchen were tested to determine their position on the pH scale. Common household products such as ammonia, baby shampoo and orange juice were tested. This event provided a unique opportunity for students to get a hands-on understanding of basic chemistry from multiple organizations.

February 21-22, 2014

The Louisiana Environmental Education Symposium was held in Shreveport. It is a two-day professional development event hosted each year by the Louisiana Environmental Education Commission and the Louisiana Environmental Education Association, which was attended by approximately 100 adults. The symposium presents an environment in which professionals are taught to support and promote environmental education through facilitating communication, coordination and professional development among an array of environmental education programs throughout the state.

February 25, 2014

STEM night was held in Baton Rouge at Glasgow Middle School. The purpose of this event was to introduce middle school students to science, technology, engineering and mathematics (STEM). The event featured science-fair-style array experiments and hands-on activities, approximately 75 kids and parents maneuvered from demonstration to demonstration learning about topics ranging from robotics to nonpoint source pollution transportation pathways.

March 6, 2014

Math and Science night was held in Baton Rouge at Baton Rouge Park Forest Elementary. The purpose of this event was to introduce elementary school students to Mathematics and Science. LDEQ staff attended this event and demonstrated the Enviroscape model for approximately 100 kids and parents.

March 8, 2014

Envirothon is a yearly hands-on environmental problem-solving competition for high school-aged students in the United States and Canada. It is North America's largest high school environmental education competition. This year's competition was held at the Burden Center in Baton Rouge, Louisiana. LDEQ staff assisted with the event, which involved approximately 75 kids and adults.

March 15, 2014

Audubon Zoo Earth Fest was held in New Orleans. The purpose of this yearly event is to help zoo visitors learn about saving the environment by conserving the Earth. Visitors participate in an array of festivities throughout the day.

March 22, 2014

Waters of the World was held in New Orleans at Louisiana Children's Museum. The purpose of this event was to allow children and parents to explore cultural diversity in the fields of science, technology, engineering and mathematics in relation to water and oceans, rivers and lakes.

April 16, 2014

Wetland Watchers Annual Wetlands Celebration was held in Norco at Wetland Watchers Park on the Bonne Carre Spillway. More than 1,000 people attended the event, which taught participants about preserving and conserving the wetlands. More than 20 interactive stations were featured.

April 16, 2014

Jefferson Beautification Earth Day Education Fair was held in Metairie at LaSalle Park and was attended by more than 300 fifth-grade students from six (6) Jefferson Parish elementary schools. This event promoted tree planting and beautification through education and public awareness.

April 17, 2014

Earth and Science Day was held at Pontchartrain Elementary School in Mandeville. The purpose of this event was to offer students hands-on experiences in the areas of nature and science. LDEQ staff attended the event and demonstrated the Enviroscape model for approximately 150 students and adults. Enviroscape is an interactive model that allows for a hands-on explanation of the transportation pathways of nonpoint source pollution in the environment.

Figure 3. NPS Unit members typically bring an assortment of promotional and educational items and literature to outreach events; these colorful items are very popular with the public, both young and old.



April 27, 2014

Louisiana Earth Day is an annual event that is held in Baton Rouge. It is one of the largest community-based Earth Day events in the country. One of the purposes of this event was to educate the community about the importance of environmental issues in Louisiana and the idea that each individual can make a difference. This event had approximately 800 attendees.

May 31, 2014

Librarypalooza is an annual event that is held at Jefferson Parish libraries. The purpose of the event is to promote a summer reading program, though presenters from environmental organizations are also invited.

September 13, 2014

Let's Go Back to the Bayou! was an outreach event conducted in Ferriday, Louisiana at the National Wildlife Refuge. The purpose of the event was to give youth and their families an opportunity to have fun while connecting with nature and learn more about the environment and wildlife in the process

September 27, 2014

National Hunting & Fishing Day is an annual event that is held at the Waddill Wildlife Center in Baton Rouge hosted by the Louisiana department of Wildlife and Fisheries. This is a national event celebrated by all 50 states. This event introduces youth to outdoor activities so they will become responsible future hunters and anglers, it is hosted in four (4) locations throughout the state and more than 10,000 people statewide attend the event.



Figure 4. DEQ's Be the Solution! campaign is emphasized in our outreach work. The idea behind this campaign is that each citizen can be part of the solution to pollution of Louisiana's waters by performing simple tasks such as recycling oil, bagging pet waste, using less fertilizer and pesticides, mulching or bagging grass clippings, and not littering.

1.2 Watershed Signs

In FFY 2014, three hundred and five signs were purchased for installation in all priority watersheds for active projects. LDEQ worked with Louisiana Department of Transportation and Development (LDOTD) to determine strategic placement of each sign. LDOTD, through an existing memorandum of understanding (MOU) with LDEQ is assisting LDEQ in the receipt and placement of the signs across the state.

These signs will increase public awareness of the projects and multi-agency cooperation in each watershed. We anticipate all signs to be installed on all active priority watersheds in FFY 2015.



Figure 5. A sign located in the Big Creek Watershed



2.0 Water Quality Improvements

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Water Quality Improvement

Louisiana's Progress on WQ-09 (a-c) and WQ-10

Louisiana's NPS Program has made significant progress in partially or fully restoring NPS impaired watersheds. Louisiana's NPS Management Plan milestones include USEPA water quality measures WQ-09(a-c) and WQ-10 for water quality improvements. Measure WQ-09 (a-c) requests states to report on estimated annual reductions in nitrogen, phosphorus and sediment from NPS to the state's watersheds. During FFY 2014, LDAF reported 324,478 pounds of nitrogen¹, 113,961 pounds of phosphorus¹ and 39,576 tons of sediment¹ were reduced through the implementation of agricultural CPs in the Ouachita River, Mermentau River, Ponchartrain and Vermilion-Teche Basins.

Measure WQ-10 requires states to report on the number of watersheds identified in the year 2000 or subsequent years, primarily impaired by NPS pollutants that have been partially or fully restored. Louisiana reviews related activities for each watershed impaired with NPS pollutants that has been delisted. All watersheds restored by 319 funds or other funding sources are counted for this measure. Three success stories (Little Silver Creek, Bayou Nezpique, and Joe's Bayou) were written and submitted to USEPA Headquarters in Washington D.C. for approval and will be published on USEPA's NPS Success Story Website at <http://water.epa.gov/polwaste/nps/Success319/>.

2.1 Success Stories

Little Silver Creek

In an effort to restore the designated uses for primary and secondary contact recreation in Little Silver Creek (Subsegment 090503), the amount of fecal coliform bacteria leaving pastures in the watershed were reduced using pasture renovators, Airways, and Grain Drills. This farm equipment was utilized by beef, dairy, and horse producers to fracture dense pasture sods, loosen tight or compacted soils without disturbing the grasses. The results include stronger intact grasslands and a reduction of runoff and fecal coliform to the creek. The fecal coliform impairment has been removed from Louisiana's 2014 303(d) list.

Bayou Nezpique

Beginning in 2009, agricultural CPs were installed in Bayou Nezpique (Subsegment 030501) in an effort to reduce sediment and nutrient runoff from agricultural fields which impaired water quality. As a result, these efforts decreased the sediment and nutrient loads entering the bayou, and resulted in the removal of TDS as a cause of impairment in the Bayou Nezpique subsegment in 2010.

Joe's Bayou

From 2006 to 2012 LDAF, USDA-NRCS worked with local landowners in Joe's Bayou (Subsegment 081002) to implement multiple agricultural CPs on approximately 4,000 acres. These CPs were used to reduce fertilizer and sediment runoff, which impaired water quality by increasing turbidity and reducing dissolved oxygen (DO). As a result, turbidity, nitrogen and phosphorus continue to trend downward, and DO concentrations continue to increase. LDEQ anticipates that with continued implementation DO will achieve its standard and be removed as a cause of impairment in the watershed.

¹*Spreadsheet Tool for Estimating Pollutant Loads (STEPL) model estimated nitrogen and phosphorus loading based upon BMPs implemented and tons of sedimentation reported.*



3.0 NPS Funding

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



NPS Funding

Louisiana's NPS program receives funding through CWA Section 319, which is prioritized to fund projects in coordination with USDA's Farm Bill, to implement its water quality goals and objectives. LDEQ continued partnering with WSCs, LDAF and USDA-NRCS in developing and implementing the WIPs for NPS pollution impaired priority watersheds.

In FFY 2014, water quality monitoring continued in 16 watersheds. The data collected assists LDEQ and its partners in making valuable decisions. Before CPs are implemented, the RWQA is used to assist in identifying critical areas contributing NPS pollutant loads in order to select the appropriate types of CPs needed. Results from samples collected after CP implementation are used to determine if CPs implemented were effective.

Watershed	Subsegment	Basin
Bayou Lafourche	020401	Barataria
Comite River	040103	Lake Pontchartrain
Natalbany River	040503	
Yellow Water River	040504	
Ponchatoula Creek/Ponchatoula River	040505	
Selsers Creek	040603	
Big Creek (NWQI)	040703	
Bayou Plaquemine Brule	050201	Mermentau River
Bayou Queue de Tortue (GoMI)	050501	
Bayou Lacassine (MRBI)	050601	
Bayou Chene (MRBI)	050603	
Bayou Lafourche (MRBI)	080904	Ouachita
Turkey Creek (MRBI)	080905/080906	
Tensas River	081201	
Lake St. Joseph	081202	
Upper Bayou Terrebonne	120601	Terrebonne

Table 1. Watersheds in which water quality monitoring was conducted in FFY 2014.

LDEQ's NPS staff and WSCs developed the three (3) WIPs below. WIPs developed for other priority watersheds are updated annually as water quality data becomes available and projects identified in the plan are implemented.

Watershed	Subsegment	Basin
Little River WIP	030804	Calcasieu
Comite River WIP	040703	Ponchartrain
Cheniere Creek WIP	080801	Ouachita

Table 2. WIPs developed by WSCs

LDEQ staff updated the WIPs and developed the below SAPs for USEPA Region 6 (R6) to review. In addition, LDEQ will be working with USEPA R6 in FFY 2015 to develop a SAP and WIP format.

Watershed	Subsegment	Basin
Bayou Chene WIP	050603	Mermentau
Boston Canal SAP	060910	Vermilion-Teche
Caney Lake SAP	081505	Ouachita
Lake St. Joseph WIP	081202	Ouachita

Table 3. WIPs and SAPs developed by NPS staff.

LDAF provided technical assistance and CP implementation on 69,257.7 acres in seven (7) watersheds, see below.

Watershed	Acres Implemented	Basin
Bayou Queue de Tortue (050501)	16,421.5	Mermentau
Plaquemine Brule (050201)	36,090.2	Mermentau
Boston Canal (060910)	41.1	Vermilion-Teche
Big Creek (081608)	213.4	Lake Pontchartrain
Bayou Louis/ Lake Louis (080202/080203)	452.2	Ouachita
Bayou Lafourche (080904)	604.2	Ouachita
Lake St. Joseph (081202)	10,834	Ouachita
TOTAL	69,257.7	

Table 4. Watersheds with CP Implementation

LDEQ utilized approximately \$2.2 million in CWA Section 319 funds for NPS and Source Water Protection, watershed coordination and NPS monitoring and implementation projects to protect and/or restore recreational waters and drinking water supplies. LDAF expended approximately \$1,573,356.98 on watershed implementation within multiple watersheds around the state. Table below provides a description of Section 319 grant expenditures during FFY 2014.

Grant Year	LDEQ (Federal)	LDAF (Federal)
2009	\$427,592.36	\$424,247.26
2010	\$7,835.40	
2011	\$521,421.89	\$591,389.74
2011 MRBI	\$296,233.92	
2012	\$49,769.58	\$427,364.29
2013	\$899,821.34	\$130,355.69
TOTAL	\$2,202,674.49	\$1,573,356.98

Table 5: Description of Section 319 Grant Expenditures



4.0 Training

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



4.1 Soil and Water Assessment Tool (SWAT) Model Training

(February 2014) – The NPS Section utilizes SWAT, which is a model already implemented by LDEQ for assessing and quantifying water quality and hydrology issues present in Louisiana streams. This model is an USEPA supported model. It is complex and requires extensive knowledge of not only water quality and hydrology, but of the intimate workings of the SWAT Model. It requires many hours of use to become proficient in calibrating and interpreting outputs given by the model. The LDEQ NPS staff is in its infancy in SWAT modeling. LDEQ contracted with Dr. Srinivasan to conduct SWAT Modeling at LDEQ. This training was provided to assist staff members with proficiency. Dr. Srinivasan is considered one of the leading experts and consultants for SWAT Modeling. His expertise in developing subroutines for SWAT, calibrating SWAT, and correctly interpreting outputs from SWAT was a huge asset in training our staff. Additionally, there are many unique parameters within the model that can be modified to address Louisiana specific needs such as efficiency rates for CPs and temperature correction factors that were addressed in the training.

4.2 SPARROW Model Training

(October 2014) – The SPARROW model is used to describe nitrogen and phosphorus delivery throughout the Mississippi/Atchafalaya Basins. It is a United States Geological Survey (USGS) supported model. It has had several upgrades over the last couple of years. Richard Rebich and Dale Robertson of the USGS have primarily been in charge of implementing upgrades and changes to the SPARROW model for our region of the country. LDEQ was privileged to have these two leading experts in SPARROW modeling provide an overview of SPARROW modeling to the staff with an emphasis on obtaining datasets for Louisiana utilizing the SPARROW Model online tools available.

4.3 Spreadsheet Tool for Estimating Pollutant Load (STEPL) Model Training

(November 2014) – STEPL employs simple algorithms to calculate nutrient and sediment loads from different land uses, weather patterns, soil types, and CP efficiencies. It is an USEPA supported model. To better understand the system, data needs, and application process, LDEQ contracted with Tetra Tech to conduct a STEPL informational and training workshop for LDEQ and LDAF staff. The instructor, Alvi Khalid, is considered the leading expert in STEPL modeling. He is also the project manager for all changes and modifications to STEPL. The model was updated to include Louisiana specific agricultural CPs currently being utilized by LDAF and USDA-NRCS. It is used by LDEQ to break out nitrogen and phosphorus loads based upon sediment reductions from CPs reported by LDAF annually for the NPS Annual Report.



5.0 Coordination With Partners

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Coordination with Partners

5.1 USDA Initiatives

During FFY 2014, LDEQ, LDAF and USDA-NRCS continued partnering in watersheds prioritized through USDA's MRBI, GoMI and NWQI (see tables 6-8). Through the Farm Bill and 319 funds USDA and LDAF work with land owners and producers to implement agriculture CPs through cost share agreements. LDEQ utilizes 319 funds to fund several contracts for monitoring and assistance from LDEQ Water Surveys (WSs) to provide watershed assessment and characterization, pre-CP sampling to collect baseline data and determine critical areas for CP implementation and post-CP sampling to determine the effectiveness of the CPs.

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Bayou Lafourche	080904	Ouachita River	Crew Lake	080500011304
			Steep Bayou	080500011308
			Halfway Bayou	080500011401
Turkey Creek	080906	Ouachita River	Turkey Creek	080500011007
			Little Turkey Creek	080500011502
			West Turkey Creek	080500011503
			Turkey Creek Lake	080500011504
Bayou Chene	050603	Mermentau River	Bayou Chene	080802020205
Bayou Lacassine	050601	Mermentau River	East Bayou Lacassine	080802020202
			West Bayou Lacassine	080802020204
			Thornwell Drainage Canal	080802020206
FFY 2011, USEPA provided LDEQ CWA Section 319 funds to evaluate the effectiveness of CPs in reducing sediment and nutrients through MRBI in Bayou Lafourche and Turkey Creek in Ouachita River Basin and Bayou Chene and Bayou Lacassine in Mermentau River Basin.				
FFY 2012, Quality Assurance Project Plans (QAPPs) were approved and sampling initiated in Bayou Lafourche on March 27, 2012 and Bayou Chene and Bayou Lacassine on June 20, 2012.				
FFY 2013, QAPP for Turkey Creek was approved and sampling initiated on January 10, 2013. Monitoring for all projects continued throughout the year.				
FFY 2014, Bayou Lafourche project ended December of 2014. Sampling will continue on Turkey Creek and Bayou Lacassine through March of 2015. In 2014 LDAF will fund additional CP implementation on Bayou Chene. LDEQ will continue water quality sampling on Bayou Chene for an additional two (2) years.				

Table 6. USDA – Mississippi River Basin Initiative

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Big Creek	040703	Lake Pontchartrain	East Fork Big Creek	080702050202
			Big Creek	080702050203
Bayou Louis & Lake Louis	080202/ 080203	Ouachita River	Bayou Louis	080402070303
			Black Bayou	080402070302
FFY 2012, USEPA provided CWA Section 319 funds to LDAF to implement CPs and LDEQ to evaluate the effectiveness of CPs in reducing sediment, nutrients and bacteria through NWQI in Big Creek and Bayou Louis/Lake Louis.				
FFY 2013, QAPP was approved and sampling initiated in Big Creek on August 13, 2013. QAPP for Bayou Louis/Lake Louis has been developed and approval anticipated in early 2014.				
FFY 2014, Rapid assessment ended on Big Creek and LDEQ, LDAF and USDA-NRCS chose long term sampling sites to continue sampling the effectiveness of the CPs. A sample plan for Bayou Louis/Lake Louis was approved in April 204. The rapid assessment for Bayou Louis/Lake Louis started in May of 2014.				

Table 7. USDA - National Water Quality Initiative

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Bayou Queue de Tortue	050501	Mermentau River	Bayou Grand Marais	080802020103
			Lyons Point Gully	080802020104
			Indian Bayou	080802020101
			Lazy Point Gully	080802020105
Grand Bayou and Little Grand Bayou	120206	Terrebonne	Bayou Corne	080903020302
			Bayou St. Vincent	080903020304
FFY 2012, USEPA provided Section 319 funds to LDAF for Bayou Queue de Tortue to implement BMPs and LDEQ to evaluate effectiveness of CPs in reducing sediment and nutrients through GoMI in Bayou Queue de Tortue and Grand Bayou/Little Grand Bayou.				
FFY 2013, QAPP for Bayou Queue de Tortue has been approved on March 20, 2013 and sampling initiated on July 24, 2013. Grand Bayou/Little Grand Bayou assessments confirm a highly hydromodified watershed that will be difficult to restore due to excessive pumps. Another watershed within the basin is being considered.				
FFY 2014, Rapid assessment ended on Bayou Queue Tortue and LDEQ, LDAF and USDA-NRCS chose long term sampling sites to continue sampling the effectiveness of the CPs.				

Table 8. USDA - Gulf of Mexico Initiative

5.2 LDEQ's Nonpoint Source and Water Surveys' Units Join Forces to Streamline Sampling

Cooperation between NPS and WS began in early 2011. Since this time sampling has become streamlined and the concern of quality assurance and control issues for field sampling is nearly a thing of the past. In conjunction with one another, the thirteen member unit of WS and the nine member unit of NPS performed water quality assessments and work in nine watersheds in 2014.

Each year the process of monitoring NPS impaired watersheds becomes more comprehensive and efficient. As technology advances so do our capabilities. Federal 319 funds have furnished the WS unit with a whole suite of the latest technological devices. Since 2011, the NPS unit has provided nearly \$600,000 in 319 federal funds for the purchase of 20 Hydrolabs with Personal Digital Assistants' (PDA), 3 StreamPro flow meters, a RiverRay, a Trimble Global Positioning System (GPS) tripod, Trimble GPS Equipment, automated water samplers, specialized equipment training classes and 20 touch screen field tablets complete with custom software. Moreover, NPS 319 funds have provided nearly \$700,000 for supplies, and salaries to the WS unit to support sampling efforts, for a combined total of approximately \$1.3 million in the last three years.

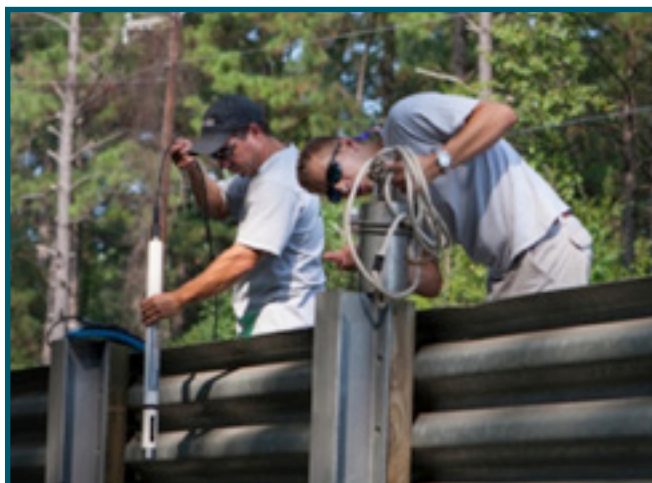


Figure 6. DEQ Employees Guy LaFleur (left) and Derek Borne (right) conducting water quality sampling from a bridge. Guy LaFleur is lowering an in-situ (in place) probe into the water to capture water quality parameters such as pH, conductivity, salinity, temperature and dissolved oxygen, while Derek Borne lowers a water sampler into the water to collect water samples to bring to the lab for analysis.



Figure 7. (Left) Former DEQ employee Zach Herrington conducting a stream discharge using a "wading" flow measurement device called a Flowtracker. A measuring line is stretched across the stream to allow for incremental measurements across the width of the stream at the sample site.

Figure 8. (Middle) Shown is the "hand-held" FlowTracker device used in conducting "wading" flows in streams and bays that can be waded.

Figure 9. (Right) Shown here is the DEQ warehouse facility in Port Allen where Water Surveys and other DEQ sections store boats and equipment used in assessing Louisiana's water bodies.



Figure 10. Pictured above is one of DEQ's shocking boats used to collect biological fish data. Shocking the fish at the proper frequency and voltage allows DEQ scientists to temporarily stun fish so that they can be measured, identified, and then released.



Figure 11. DEQ employee Hannah Everritt working with survey equipment which will be used to measure stream channels.

In addition to technological skills, the WS staff has a vast knowledge of Louisiana's waterways. WS collects samples for the Total Maximum Daily Load (TMDL) models for the state's watersheds, performs the sampling for the use attainability analysis, a structured scientific assessment of the chemical, biological, physical and economic factors affecting the attainment of designated water uses in a watershed and were instrumental in the development of the state's ecoregions. Their knowledge of Louisiana's landscape and waterways is unmatched by any other agency. Therefore, WS is brought in during the design and implementation phase assisting in developing the sampling design for each 319 project. Their knowledge of the landscape assist in selecting sample site locations within the watershed to maximize the potential of locating the hot spot areas of high pollutant loading into the watershed.

Together the sampling design developed by NPS staff and WS provides a comprehensive assessment of each 319 watershed project. The assessment is accomplished by setting up multiple sample sites within a watershed and sampling these sites once or twice a month, for six (6) months up to one (1) year, establishing a baseline for the entire watershed. Additionally, the baseline data are used to narrow the focus for long term sampling within the watershed by identifying hot spots. The information gathered provides guidance to NPS staff and their partners, aiding in the strategic placement of CPs throughout the watershed.

Another unique and mutually beneficial aspect of joining forces is information sharing, as WS does not work exclusively for the NPS unit, their resources and capabilities are used by numerous inter-departments housed within the LDEQ, thus allowing a holistic approach to projects on a statewide level.

A key component of this partnership is communication. If at any time the WS team has a question or concern about a sampling site or the watershed, they immediately contact the NPS project manager for resolution. In addition to internal communication with one another, the WS unit provides support to our watershed coordinators and stakeholders throughout the state, guiding them on proper sampling techniques and in sample site selection.



Figure 12. DEQ employees launching a boat prior to collecting water quality and flow measurements on a south Louisiana bayou.

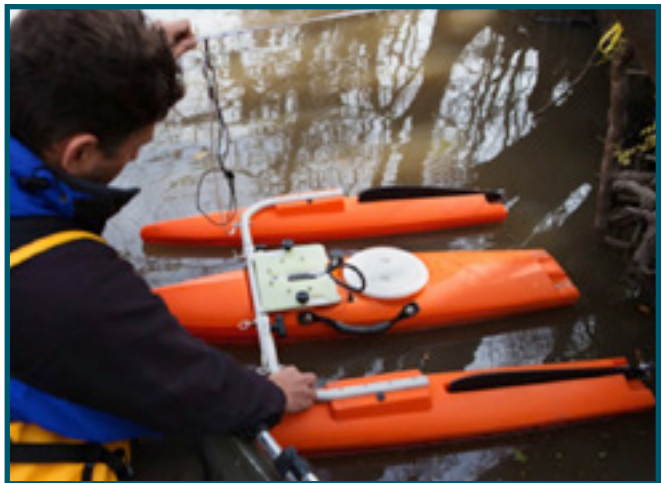


Figure 13. DEQ employee conducting a flow measurement by boat on a south Louisiana bayou using a Doppler flow measurement device called the RiverRay Acoustic Doppler Current Profiler (ADCP). Flows can be done at stations along a cross section of a stream or bayou, or they can be done by floating the device back and forth across the stream to take readings.

Coming Soon: The NPS unit purchased 20 touch screen tablets, which are being equipped with customized software for the WS's team to utilize for completing data sheets in the field. These tablets allow for field data sheets to be digitized, reducing the margin of error and expediting the process of data sharing. These tablets with their customized software are expected to be available in 2015.



Figure 14. DEQ employee Robert McGuire being trained on DEQ's "backpack", portable shocking unit, which is used to collect fish data similarly to the way a boat shocking unit works, but in streams that are shallow enough to wade.



Figure 15. Coming Soon: Touchscreen field tablets with the customized software

5.3 LDEQ/LDAF/USDA-NRCS Plan for Success

LDEQ, LDAF and USDA-NRCS, have further refined their collaborative process (see Table 9) in an effort to be more efficient and effective in restoring watersheds in Louisiana. Louisiana presented the concept at the NPS National Conference November 19, 2014. The partnership concept will be used to select a watershed in 2015 for a pilot study. The watershed will be chosen with a new selection process in place based on land owner participation ensuring the greatest success. For one (1) year LDEQ's WS staff will be conducting a complete assessment and characterization of the watershed and to collect real time baseline data, and determine critical areas. The partnership meets on a quarterly basis or more frequently as needed to discuss the WS staff's findings and make decisions based on the findings.

Planning For Success
Priority Watershed Selection Process <ul style="list-style-type: none"> ● Assess subsegments on Louisiana's 303(d) list. ● Eliminate subsegments with no NPS impairments. ● Extract subsegments with ambient sites recently sampled. ● Pull out subsegments with heavy agriculture land use. ● Review existing ambient data to finalize the list. ● Interim list goes to partners for input to eliminate and rank by landowner participation. ● Partnership collaboratively decides on final priority watershed list.
Agriculture Assessment <ul style="list-style-type: none"> ● Conducted by District Conservation staff. ● Results: <ul style="list-style-type: none"> - Not a good choice, it is removed from the list. - A good choice, a water quality assessment is conducted.
Strategic Assessment Plan <ul style="list-style-type: none"> ● Written by partners and stakeholders and includes: <ul style="list-style-type: none"> - Identification of potential causes and sources. - Defines water quality goals. - Provides explanation for proposed project. - Timeline of tasks and milestones. - Describes and explains potential management measures. - Allows for the development of water quality component. - Allows for placement of water quality monitoring sites within a watershed.
Water Quality Assessment/Characterization <ul style="list-style-type: none"> ● Conducted by LDEQ WS staff. ● Includes a watershed characterization, hydrology study and RWQA site selection ● Results: <ul style="list-style-type: none"> - Not a good choice, it is removed from the list. - A good choice, start RWQA
Rapid Water Quality Assessment (RWQA) <ul style="list-style-type: none"> ● Sites are based on water quality assessment findings. ● 25 – 30 sample sites analyzed using field kits. ● Lasting one (1) year or as needed. ● REAL TIME baseline. ● Determines critical areas. ● Keep stakeholders informed. ● Determine where CPs need to be focused.

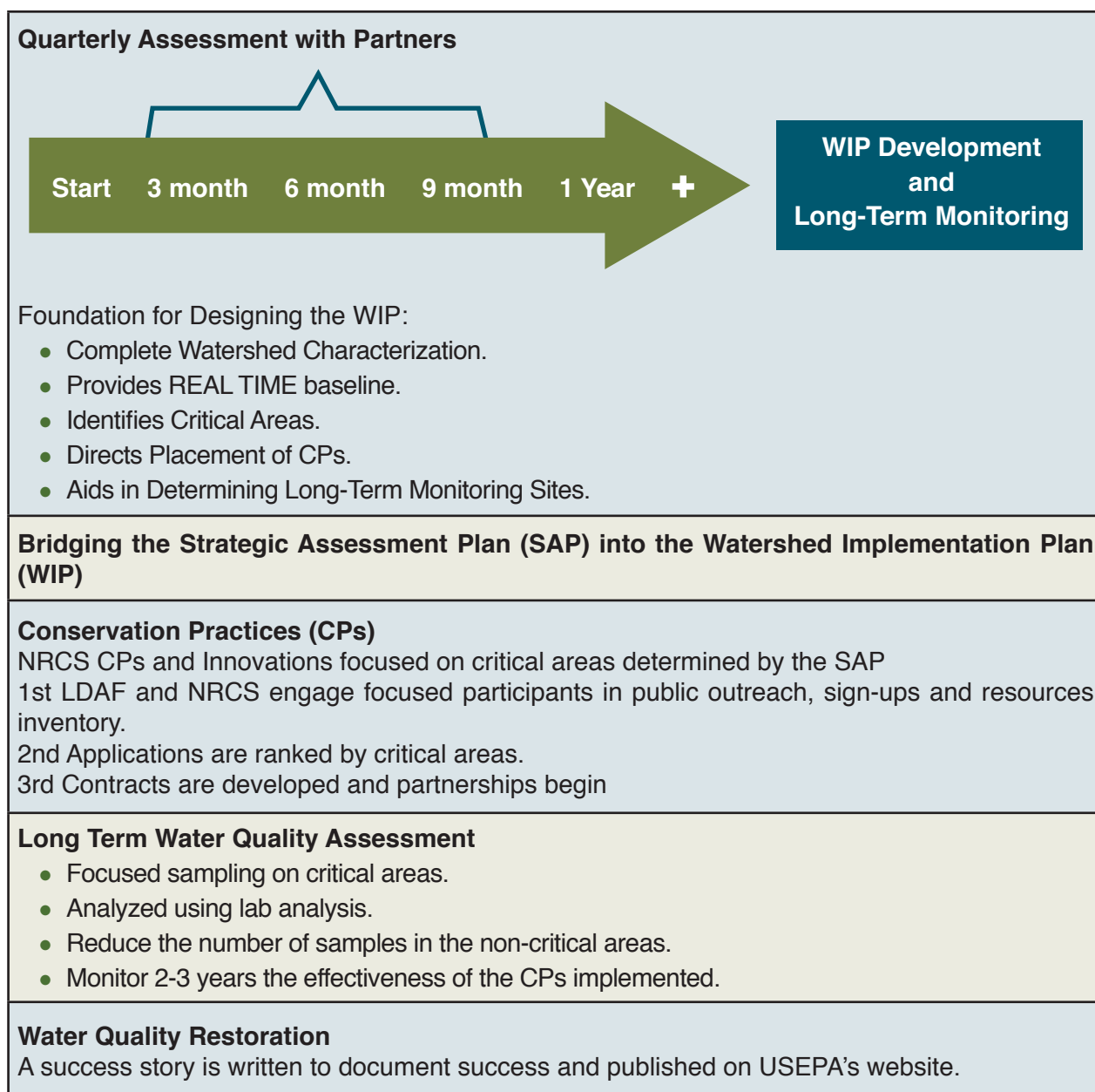


Table 9. LDEQ, LDAF and USDA-NRCS Plan for Success

5.4 Louisiana Nutrient Management Strategy Update

Nutrient impacts and eutrophication are a nationwide water quality concern. Many entities, including the Mississippi River Gulf of Mexico Watershed Nutrient Task Force, Hypoxia Task Force, Gulf of Mexico Alliance, USEPA, and the Gulf Coast Ecosystem Restoration Task Force, are collaborating to address excess nutrients within the nation's watersheds.

In 2012 an interagency team comprised of the Coastal Protection and Restoration Authority (CPRA) of Louisiana, LDAF, LDEQ, and LDNR collaborated on the development of a statewide strategy for nutrient management in Louisiana. In 2014, the team released a statewide NMS to address nutrient issues impacting watersheds within the State. Nutrient issues include both point and NPS. Strategies to address nutrients include:

- agricultural CPs;
- advanced wastewater treatment technologies;
- coastal programs and restoration activities focused on managing nutrient levels while meeting regulatory requirements under the CWA; and
- incentive-based approaches for participation of all stakeholders within the watershed community.

The state's NMS has been developed as one component of a multi-state initiative intended to manage and reduce nutrients (nitrogen and phosphorus) entering Gulf of Mexico waters, thereby reducing the zone of hypoxia. The Gulf Hypoxia Action Plan (2008) identified 11 action items; the first action item is to develop state level nutrient strategies.

In 2014 Louisiana's NMS team focused on implementation of the strategy. Team members attended and discussed the state's progress on the states NMS at the spring and fall Hypoxia Task Force Meetings in Little Rock, Arkansas and Alton, Illinois respectively.

5.5 A State Plan for Prioritizing Watersheds for Restoration and Protection in Louisiana

303(d) Program Vision for 2016 through 2022

The CWA Section 303(d) Program provides effective integration for implementation of activities to restore and protect the nation's aquatic resources, where the nation's waters have been assessed. Restoration and protection objectives have been systematically prioritized, and TMDLs and alternative approaches are being adaptively implemented to achieve water quality goals with the collaboration of states, federal agencies, tribes, stakeholders, and the public.

The USEPA and states worked together to develop the new vision and six (6) goal statements to help coordinate and focus efforts in advancing the effectiveness of the program. The vision and goals are neither regulation nor policy guidance, but provide a mechanism for USEPA and states to better manage the program to achieve water quality goals. USEPA encourages each state to embrace the vision concept and develop a strategy that outlines a comprehensive, integrated and iterative approach to addressing the challenge of achieving and communicating water quality improvements.

The primary goals of this new long-term vision include prioritization, assessment, protection, alternatives, engagement, and integration. In 2014, LDEQ provided a draft framework document for prioritization under the new vision. The new vision will guide the realization of our clean water goals in a manner that recognizes lessons learned from the past two decades of 303(d) Program implementation and addresses new challenges with innovative solutions. The purpose of the framework document is to describe the prioritization framework for the state of Louisiana under the new long-term vision. There has been a long-term connection between the Section 319 NPS program and the CWA 303(d) programs. In Louisiana, there is an interest in both programs to collaborate to ensure strategic use of available resources to achieve water quality goals. The LDEQ/LDAF NPS Program will play a role in the new vision. The prioritized watersheds in the LDEQ/LDAF NPS Program and efforts currently underway in the Louisiana NMS will be considered in the prioritization under the new vision of the 303(d) Program.

5.6 Watershed Coordinators

LDEQ WSCs continue to serve as valuable partners in implementing Louisiana's NPS program. In FFY 2014, LDEQ partnered with six (6) WSCs located across the state. This Partnership accomplishes several goals listed in Louisiana's 2011-2016 NPS Management Plan including:

- Developing WIPs;
- involving appropriate stakeholders in watershed implementation;
- statewide educational programs;
- identifying priority areas in the watershed for CPs implementation;
- implementing CPs in watershed priority areas;
- water quality monitoring and data analyses to evaluate effectiveness of CP implementation; and
- preparing success stories or identifying future actions needed to achieve success.

These WSCs are dedicated to restoring and preserving the water quality in the areas they live and serve.

Lake Pontchartrain Basin Foundation

WSC: Andrea Bourgeois-Calvin, PhD and Chelsea Core.

Area: Lake Pontchartrain and Pearl River Basins.

WIPs: Bogue Falaya & Abita and Natalbany Watersheds.



FFY 2014

Stakeholders

- LDAF, St Tammany Task Force, Tangipahoa Task Force.

Education & Outreach

- Educated home owners on individual home sewer system operation and maintenance.

Implementation

- Inspected individual home sewage systems in Yellow Water River Watershed.

Post-BMP Monitoring

- Continued water quality monitoring in Yellow Water River and Ponchatoula Creek watershed to determine the effectiveness of inspections.

FFY 2015

WIPS

- WIPs will be updated on an annual basis.

Education & Outreach

- Will continue to educate home owners on individual home sewer system operation and maintenance.

Implementation

- Individual home sewage system inspections in Natalbany River watershed.

Post-BMP Monitoring

- Water quality monitoring in Natalbany River watershed to determine the effectiveness of inspections.

Bayou Land RC&D

WSC: Colleen Butler and Siva Nunna.

Area: Lake Pontchartrain, Terrebonne and Barataria Basins.

WIPs: Upper & Middle Bayou Terrebonne and Bayou Folse Watersheds.



FFY 2014

WIP

- Revised Upper Bayou Terrebonne, Middle Bayou Terrebonne, and Bayou Folse WIPs.

Stakeholders

- Tulane University, BTNEP, Terrebonne Task Force, and Lafourche Task Force, South Central Planning and Development, LDAF, USDA.

Internships

- Sponsored Tulane University students to assist in watershed activities.

Education & Outreach

- Utilized enviroscape model to engage stakeholders in learning about NPS pollution.

Pre-BMP Monitoring

- Water quality monitoring began in Bayou Folse watershed in September 2014 for baseline data.

Implementation

- Began working with local and state government in Upper Bayou Terrebonne watershed to gain support to hire an inspector to inspect individual home sewage systems.

Post-BMP Monitoring

- Water quality monitoring began in critical areas in the Upper Bayou Terrebonne watershed in September 2014.

FFY 2015

WIPs

- WIPs will be updated on an annual basis.

Education & Outreach

- Begin education and outreach efforts focused on individual home sewer system operations and maintenance. Work with ULL in delivering homeowner certification classes.

Pre-BMP Monitoring

- Water quality monitoring started in September 2014 on Bayou Folse to collect baseline data.

Implementation

- Continue to work with the local and state government in Upper Bayou Terrebonne watershed to implement individual home sewage system inspections.

Post-BMP Monitoring

- Water quality monitoring began in critical areas in the Upper Bayou Terrebonne watershed in September 2014 to determine the effectiveness of individual home sewage system inspections.

Capital RC&D

WSC: Donny Latiolais

Area: Lake Pontchartrain, Terrebonne, Pearl and Mississippi Basins.

WIPs: Pontchatoula Creek & Yellow Water River, Selsers Creek, and Comite River Watersheds.



FFY 2014

Stakeholders

- Keep Hammond Beautiful, Hammond Storm Water Committee, SELU-OSH&E Advisory Committee Meeting, LDHH and Tangipahoa task force meetings.

Education & Outreach

- Education and outreach to homeowners involving their home septic systems
- Participated in Trash Bash and HHW Recycling events. Disseminated storm water and BMP material.

Pre-BMP Monitoring

- LDEQ Water Surveys will start monitoring Comite River to identify critical areas contributing to high concentrations of fecal coliform bacteria.

Implementation

- Continued individual home sewage inspections in Selsers Creek and Ponchatoula Creek and will start inspections in Comite watershed once critical areas are identified.

Post-BMP Monitoring

- Once inspections start in Comite Watershed, LDEQ Water Surveys will start monitoring Comite River to determine the effectiveness of the inspections.

FFY 2015

WIPs

- Begin development of WIP in Tunica Bayou.

Stakeholders

- Keep Hammond Beautiful, Hammond Storm Water Committee, SELU-OSH&E Advisory Committee Meeting, LDHH and Tangipahoa task force meetings

Education & Outreach

- Continue education and outreach to homeowners involving their home septic systems.

Pre-BMP Monitoring

- LDEQ Water Surveys will continue monitoring in Comite River and Capital RC&D will monitor in Tunica Bayou to identify critical areas contributing to high concentrations of fecal coliform bacteria.

Implementation

- Continued individual home sewage inspections in Comite Watershed and begin inspections in Tunica Bayou.

Post-BMP Monitoring

- As inspections continue in Comite Watershed, LDEQ Water Surveys will continue monitoring Comite River to determine the effectiveness of the inspections; Once inspections start in Tunica Bayou, Capital RC&D will continue monitoring Tunica Bayou to determine the effectiveness of the inspections.

Trailblazer RC&D

WSC: Olivia Ward

Area: Red River and Ouachita River Basins.

WIPs: Dugdemona River, Caney Lake and Cheniere Creek Watersheds.

FFY 2014

WIP

- Developed WIP for Cheniere Creek Watershed.

Stakeholders

- Silviculture landowners and industry representatives.

Educational & Outreach

- Developed and conducted several educational presentations, hands-on activities and field trips at schools, libraries, police jury meetings, water fests, and special events. Also press releases, monthly newsletters and a Facebook page are used for WQ education & outreach.

Pre-BMP Monitoring

- In continuation from 2013, four watershed tours were conducted to survey the watershed for NPS issues, changes in the watershed, and potential problem areas. Pictures at each stop/monitoring location and notes were logged from each tour.

Implementation

- Held Forestry BMP Workshop on September 19, 2014.

FFY 2015

WIP

- Develop WIP for Nantachie Creek Watershed.

Watershed Assessment

- Will conduct watershed tour(s) to survey for NPS pollution relating to the listed impairment in Nantachie Creek Watershed.

Implementation

- Planned Forestry Workshop for May 1, 2015 in targeted area.

Louisiana Delta Pride, L.L.C.

WSC: Mike Adcock

Area: Ouachita River Basin

WIPs: Upper and Lower Joe's Bayou Watersheds

FFY 2014

WIP

- Assisted LDEQ staff in compiling hydrologic data for the Bayou Louis/Lake Louis WIP.

Stakeholders

- Bayou Louis stakeholder and Brushy – Walnut Bayou task forces.
- Local government and engineers involved in Turkey Creek drainage project.

Educational & Outreach

- Brushy Bayou Clean-Up Day.

Pre-BMP Monitoring

- Began water quality monitoring in Bayou Lafourche (upper) to identify the critical areas contributing to impairments.

Implementation

- Assisted local Soil and Water Conservation Districts (SWCDs) with local landowners participating in BMP implementation.

FFY 2015**Pre-BMP Monitoring**

- Assist as needed with water quality monitoring in Bayou Lafourche (upper) to identify the critical areas contributing to impairments.

Implementation

- Continue assisting local SWCDs with local landowners participating in BMP implementation.



Twin Valley RC&D

WSC: Keisha McConathy.

Area: Red River, Sabine, Upper Calcasieu and Upper Vermilion-Teche Basins.

WIPs: Six Mile Creek and Little River Watersheds.

FFY 2014**WIP**

- Continued development of Little River Watershed WIP.

Educational & Outreach

- Developed presentations.

Pre-BMP Monitoring

- Completed a training session on sampling techniques for Little River.
- Contacted volunteers to assist with future sampling.

Implementation

- BMP implementation in the watershed is being completed by LDAF for Six Mile Creek, no implementation in Little River.

Post-BMP Monitoring

- Water Survey's monitored Six Mile Creek watershed to identify the critical areas contributing to high concentrations of fecal coliform bacteria.

FFY 2015**WIP**

- LDEQ will complete the WIP in early 2015.

Stakeholders

- Develop a stakeholder group.

Educational & Outreach

- Develop and give oral presentations to the stakeholders and local schools.

Pre-BMP Monitoring

- Visually monitor watersheds and create monthly reports about potential causes of impairment.

Implementation

- BMP implementation will continue in Six Mile Creek.

Post-BMP Monitoring

- WS's continues to monitor Six Mile Creek for high concentrations of fecal coliform bacteria.



6.0 Meeting NPS Milestones

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Meeting NPS Milestones

Louisiana's NPS Management Plan includes annual milestones. In FFY 2014, Louisiana's NPS program continued its focus on watershed planning, assessment, monitoring and implementation, in 23 water bodies.

Basin	Water Body	P	A	M	I	Subsegment
Barataria	Bayou Lafourche			✓	✓	020401
Calcasieu River	Six Mile Creek	✓	✓	✓		030503/030504
Lake Pontchartrain	Natalbany River			✓	✓	040503
	Yellow Water River			✓	✓	040504
	Ponchatoula Creek/Ponchatoula River			✓	✓	040505
	Selsers Creek	✓	✓	✓	✓	040603
	Big Creek (NWQI)	✓	✓	✓		040703
Mermentau River	Bayou Plaquemine Brule			✓	✓	050201
	Bayou Queue de Tortue (GoMI)	✓	✓	✓	✓	050501
	Bayou Lacassine (MRBI)			✓		050601
	Bayou Chene (MRBI)			✓		050603
	Boston Canal	✓	✓	✓	✓	060910
Ouachita River	Bayou Louis/Lake Louis	✓	✓	✓		080202/080203
	Upper Ouachita River (Mollicy Farms)			✓		080101
	Cheniere Creek	✓				080801
	Bayou Lafourche (MRBI)			✓	✓	080904
	Turkey Creek (MRBI)			✓		080905/080906
	Lake St. Joseph			✓	✓	081202
	Dugdemonia River				✓	081401
	Caney Lake	✓	✓			081505
	Little River	✓				081601/081602
	Upper Bayou Terrebonne			✓		120301
	Bayou Folse	✓	✓	✓		120305

Table 10. Water bodies included planning (P), assessment (A), monitoring (M) and implementation

(I) In FFY 2014.

6.1 LDAF BMP Implementation

The LDAF utilized USEPA Section 319 funds expending \$1.57 million to provide technical assistance and CPs through cost-share and incentive payments on nearly 70,000 acres of private farm land in an effort to restore or partially restore surface water quality in seven (7) priority watersheds within the Ouachita River, Mermentau River, Ponchartrain and Vermilion-Teche Basins. These CPs were carried out through the traditional conservation partnership cooperation between the USDA-NRCS, the LDAF and participating SWCD. These local SWCDs included Acadia, Vermilion, Jefferson Davis, Northeast, Catahoula, Evangeline and Tensas-Concordia. Within this fiscal year, a total of 168 cooperator contracts were developed and activated with individual private landowners or farm operators. Signed contracts establish the participant's CP payment schedules and implementation requirements, defining the relationship between themselves and the Federal-State-Local conservation delivery team. To attain Section 319 water quality crop rotation objectives, an array of proven CPs such as grade stabilization, conservation, prescribed grazing, heavy use area protection, critical area planting, irrigation land leveling, tillage and residue management and others were cost-shared through this program. Participants are required to implement a total Resource Management System (RMS) plan through which additional CPs are prescribed. These additional CPs, further ensure reduction of water quality impairments and exceed the participants required matching funds. To ensure effective delivery of these necessary CPs, LDEQ provides water quality data, watershed modelling, targeted sampling, mapping and other critical logistical assistance to ensure maximum effectiveness for our collective efforts in restoring water quality in agricultural settings.

Watershed	Practice	Total	Unit
Bayou Queue de Tortue	Conservation Crop Cover	1,117.40	Acres
	Grade Stabilization Structures	17	Units
	Irrigation Land Leveling	1,021.40	Acres
	Nutrient Management	3,591.20	Acres
	Pest Management	3,351.20	Acres
	Record Keeping	3,591.20	Acres
	Residue Management	2,456	Acres
	Shallow Water for Wildlife	1,053.10	Acres
Boston Canal	Cover Crop	41.10	Acres
	Managed Field Borders	257,568	Feet
	Sewer Pump Outs	25.00	Units
Bayou Plaquemine Brule	Conservation Crop Cover	6,735.90	Acres
	Dry Seeding of Rice	1,718.10	Acres
	Grade Stabilization Structures	2.00	Units
	Irrigation Land Leveling	758.20	Acres
	Irrigation Water Management	246.90	Acres
	Nutrient Management	6,419.80	Acres
	Pest Management	6,419.80	Acres
	Record Keeping	6,419.80	Acres
	Residue Management	3,955.10	Acres
	Shallow Water for Wildlife	3,652.60	Acres

Lake St. Joseph	Cover Crop	309.90	Acres
	Crop Rotation	5,191.30	Acres
	Nutrient Management	4,742.60	Acres
	Residue Management	5,191.30	Acres
Lake Louis	Critical Area Planting	0.10	Acres
	Grade Stabilization Structures	1.00	Units
	Precision Land Farming	15.50	Acres
	Residue Management	436.70	Acres
Big Creek	Clean Out Waste Lagoon	2.00	Units
	Critical Area Planting	1.00	Acres
	Fence	2,608.00	Feet
	Forage Planting	105.20	Acres
	Heavy Use Area	7,724.00	Sq. Ft.
	Pipeline	3,875	Feet
	Waste Lagoon Close	3.00	Units
	Watering Facilities	10.00	Units
	Comprehensive Management Plans	14.00	Units
Bayou LaFourche	Critical Area Planting	0.20	Acres
	Fence	7,857.00	Feet
	Grade Stabilization Structures	8.00	Units
	Irrigation Land Leveling	533.00	Acres
	Irrigation Pipeline	17,372	Feet
	Nutrient Management	35.50	Acres
	Waste Utilization	35.50	Acres

Table 11. CPs Implemented in Each Watershed



7.0 Highlighted Activities in Priority Watersheds

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Highlighted Activities in Priority Watersheds

7.1 Big Creek Watershed (subsegment 040703)

Located in Lake Pontchartrain Basin.

Flows through Tangipahoa Parish from its headwaters to Tangipahoa River.

Funding

- USDA - fund CPs through NWQI.
- LDAF- fund CPs through CWA Section 319 FFY2012 work plan.
- LDEQ – fund water quality assessment and monitoring through CWA Section 319 FFY2009 and 2010 work plans.

Integrated Report

Louisiana 2012 IR – Big Creek

- Fully meeting fish and wildlife propagation (FWP), but not meeting primary contact recreation (PCR) and secondary contact recreation (SCR) designated uses.
- Suspected causes of impairment: fecal coliform bacteria.
- Suspected sources of impairment: dairies.

TMDL

- Recommended an 88 percent reduction in fecal coliform bacteria in order to meet in-stream water quality standards and restore designated uses.

WIP

- Approved by USEPA R6 on March 6, 2013.

2013

- LDEQ NPS and WS, LDAF and USDA-NRCS staff conducted reconnaissance surveys to determine location of RWQA sampling sites.
- February 14, 2013 – LDAF began sign ups. Fourteen applications were received. Farm visits were conducted, soil and waste lagoons were sampled and Certified Nutrient Management Plans (CNMPs) were developed for 11 farms.
- March 22, 2013 – QAPP approved by USEPA R6.
- August 27, 2013 – started collecting RWQA samples for fecal coliform analysis at 26 locations.

2014

- Completed RWQA (included 26 sampling sites) and located critical areas.
- End of FFY 2014, selected 16 long term sites based on critical areas.
- The following CPs have been proposed and will be implemented in between 2014 and 2015:
Fencing, pipelines, water troughs, HUA-concrete, HUA-rock, stream crossing, forage & biomass planting, grazing land mechanical treatment, pond, critical area treatment, wells, prescribed grazing, portable livestock shade, tree planting, forest site prep, prescribed burning, mulching, forest trails and landing, forest stand improvement, roof runoff structure, closure of waste impoundment, lagoon pump out, 3 or 4 inch pipe, 6 or 8 inch pipe, big gun system, self-propelled big gun system, pump to pipeline connection, and micro irrigation.

Long term sites will be monitored for approximately three (3) years to determine the effectiveness of the CPs and validate successful restoration of the watershed.

7.2 Bayou Queue de Tortue Watershed (subsegment 050501)

Located in the Mermentau River Basin.

Flows through Acadia, Lafayette, and Vermillion Parishes.

Funding

- USDA - fund CPs through GoMI.
- LDAF- fund CPs through CWA Section 319 FFY 2012 work plan.
- LDEQ – fund water quality assessment and monitoring through CWA Section 319 FFY 2009 and 2010 work plans.

Integrated Report

Louisiana 2012 IR – Bayou Queue de Tortue

- Fully meeting PCR and SCR, but not meeting FWP designated use.
- Suspected causes of impairment: Fipronil, nitrate/nitrite (NO_3/NO_2), low DO, total phosphorus (TP), total dissolved solids (TDS), total suspended solids (TSS), turbidity and sedimentation/siltation.
- Suspected sources of impairment: irrigated and non-irrigated crop production.

TMDL

- Recommended a 60 percent reduction in DO for man-made NPS loadings in the watershed.
- Recommended a 27.4 percent reduction in TDS to meet the standard for FWP.

WIP

- Approved by USEPA R6 on March 13, 2013.

2013

- LDEQ NPS and WS staff conducted a water quality assessment to determine location of RWQA sampling sites.
- February 2013 – LDAF began sign ups. Thirty-four applications were received and 28 contracts developed.
- March 20, 2013 – QAPP approved by USEPA R6.
- July 24, 2013 – started collecting RWQA samples at 22 locations.
- CPs: 369 acres of irrigation land leveling implemented and 4,631 acres under contract.

2014

- Continued RWQA in 2014. Will complete RWQA in February 2015.
- Will selected long term sites based on critical areas by February 2015.
- Twenty Nine CPs have been implemented.

Long term sites will be monitored for approximately three (3) years to determine the effectiveness of the CPs and validate successful restoration of the watershed.



8.0 Statewide Programs

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM

8.1 Coastal Nonpoint Pollution Control Program (CNPCP)

Management Measure: Administration

Outreach Efforts

The Office of Coastal Management (OCM) for the LDNR continues its efforts to serve both as a source of information and educational resource regarding NPS pollution control. One of the key components of these efforts is targeted at educating local youths about sources of NPS pollution and what the students can do to reduce NPS pollution. Throughout the year, staff traveled to local schools and outreach events such as: Earth Day in Baton Rouge, Step Outside Day in Krotz Springs, Ocean Commotion in Baton Rouge, St. James Parish Ag Day in Sorrento, and US Fish and Wildlife Service Wild Things Festival in Lacombe. Participation in outreach events such as these allow our staff to educate a large number of people about the importance of NPS pollution control, the sources of NPS pollution, and what can be done to reduce impacts to the environment from NPS pollution.

Additionally, many local parishes continue grass-roots efforts to educate the public about NPS pollution. In 2014, Jefferson Parish held its 14th Annual Storm Water Poster and Essay Awards. This annual contest includes public, private, and parochial school students in third through eighth grade. The contest challenges the students to depict or describe at least one source of NPS pollution and present solutions.



Figure 16. Staff explain NPS pollution to Senator Mary Landrieu at the Wild Things Festival in Lacombe, LA.



Figure 17. Winners of the 14th Annual Storm Water Poster and Essay Contest

Management Measure: Urban Areas

Development of the Hydrologic Modification Impact Analysis Guide

The OCM strives to achieve a balance between conservation of coastal resources and development. To accomplish this goal, OCM reviews every Coastal Use Permit (CUP) application with the objective of avoiding and/or minimizing adverse impacts wherever possible. The Hydrologic Modification Impact Analysis (HMIA) guide was developed to create a tool that provides a consistent and concise set of components that are necessary for OCM to adequately review potential project impacts with respect to hydrology, drainage and water discharge. The implementation of this policy is now used to evaluate all CUP applications to determine the pre- and post-development surface water conditions at a site proposed and also to determine if adverse impacts to adjacent lands and/or waterways will occur as a result of the proposed use. A copy of the guide can be found on OCM's webpage at <http://dnr.louisiana.gov/assets/OCM/permits/NAJ/HMIA.pdf>.

Coastal Use Permitting

OCM has the authority to issue three different types of determinations for projects located within the Louisiana Coastal Zone: an exemption or No Direct and Significant Impact on coastal waters (NDSI), a General Permit (GP), or CUP.

Number of Coastal Use Permit Applications		
	July 2013- December 2013	January 2014 – June 2014
Received	843	917
Issued	795	883
General Permits Issued	294	385
Coastal Use Permits Issued	195	228
Other Issued*	306	270

**Other Issued = projects determined to be exempt, no direct or significant impact, and projects outside of the Coastal Zone.*

Table 12. Conditions in GPs

During this reporting cycle, OCM worked with constituents to develop a new general permit - GP 28 - for use in the Louisiana Coastal Zone. GP 28 authorizes breach repair of existing spoil banks on private property and maintenance, repair and replacement of existing water control structures on private property, was finalized. Additionally during this time, GPs 6 and 18 were modified and renewed, and GPs 5, 7, 20, 25 and 26 were renewed. OCM currently has twenty three (23) active General Permits, which can be found on the OCM webpage at <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=728>.

Both GPs and individual CUPs allow OCM to add conditions to the determination. The conditions may be general or specific to the activity, but all conditions aim to avoid and/or minimize adverse impacts wherever possible. See below for some examples of conditions that have been input into General Permits and/or CUPs:

- The applicant shall implement adequate erosion/sediment control measures to insure that no sediments or other activity related debris are allowed to enter waters of the state. Accepted measures include the proper use of vegetated buffers, silt fences or other Environmental Protection Agency construction site stormwater runoff control BMPs.

- Applicant shall not discharge any drilling and/or workover effluent except for flocculated filtered water into the waters in the areas of the proposed activity. Discharge rate of water shall not exceed the rate of filtering.
- Applicant shall not discharge any produced waters into the waters in the areas of proposed activity.
- Applicant, Applicant's contractors and sub-contractors shall not discharge any human waste from any vessel that does not meet or exceed the requirements of the LDHH.
- That permittee shall insure that all sanitary sewage and/or related domestic wastes generated during the subject project activity and at the site, thereafter, as may become necessary shall receive the equivalent of secondary treatment (30 mg/l BOD5) with disinfection prior to discharge into any of the streams or adjacent waters of the area or, in the case of total containment, shall be disposed of in approved sewerage and sewage treatment facilities, as is required by the State Sanitary Code. Such opinion as may be served by those comments offered herein shall not be construed to suffice as any more formal approval(s) which may be required of possible sanitary details (i.e. provisions) scheduled to be associated with the subject activity. Such shall generally require that appropriate plans and specifications be submitted to the LDHH for purpose of review and approval prior to any utilization of such provisions.
- That permittee shall insure that any habitable structure (i.e. home, camp, trailer, etc.) existing at the site (or subsequently anticipated as a result of these property improvements) has been provided (or shall be appropriately provided, upon such structure siting) with an individual-type domestic waste disposal system (i.e. septic tank, oxidation pond, mechanical plant, etc.) for which local health unit approval shall have been secured, as is required by the State Sanitary Code. Should such not have been accomplished, it will be necessary for Permittee to contact those appropriate personnel of the local governing health unit in order that such be accomplished.
- No hydrocarbons, substances containing hydrocarbons, drilling mud, drilling cuttings, and/or toxic substances shall be allowed to enter adjacent waterways and wetlands.

Management Measure: Roads, Highways and Bridges

During this reporting period, the CNPCP worked together to develop a GIS spatial analyst tool to determine priority areas for retrofit projects for existing roads, highways and bridges throughout the 6217 Management Area. One of the main goals was to develop a tool that would have the capability to develop a priority list of areas and features to focus on. The CNPCP worked together to determine the criteria and parameters to define areas of interest and further hone in on the pertinent information. The CNPCP determined the areas of interest would be defined as those areas located within the Louisiana Coastal Zone, located within the 6217 management area, located outside Municipal Separate Storm Sewer System (MS4) urbanized areas, and located within the priority 40 watershed subsegments (as identified in LDEQ's Management Plan).

After the areas of interest were identified, the CNPCP incorporated GIS data to identify potential areas of impairment within the areas of interest. These datasets were compiled through LDEQ's Management Plan process, and include areas of potential impairment for multiple constituents. For the purposes of this prioritization list, the CNPCP compared the areas of interest with the datasets for (1) oil and grease and (2) TSS. Only one (1) area was identified as potentially impaired for Oil and Grease; however, this area was determined to not require further assessment at this time due to the following factors:

1. Outside of the priority watersheds, and
2. Inside of a designated MS4 area.

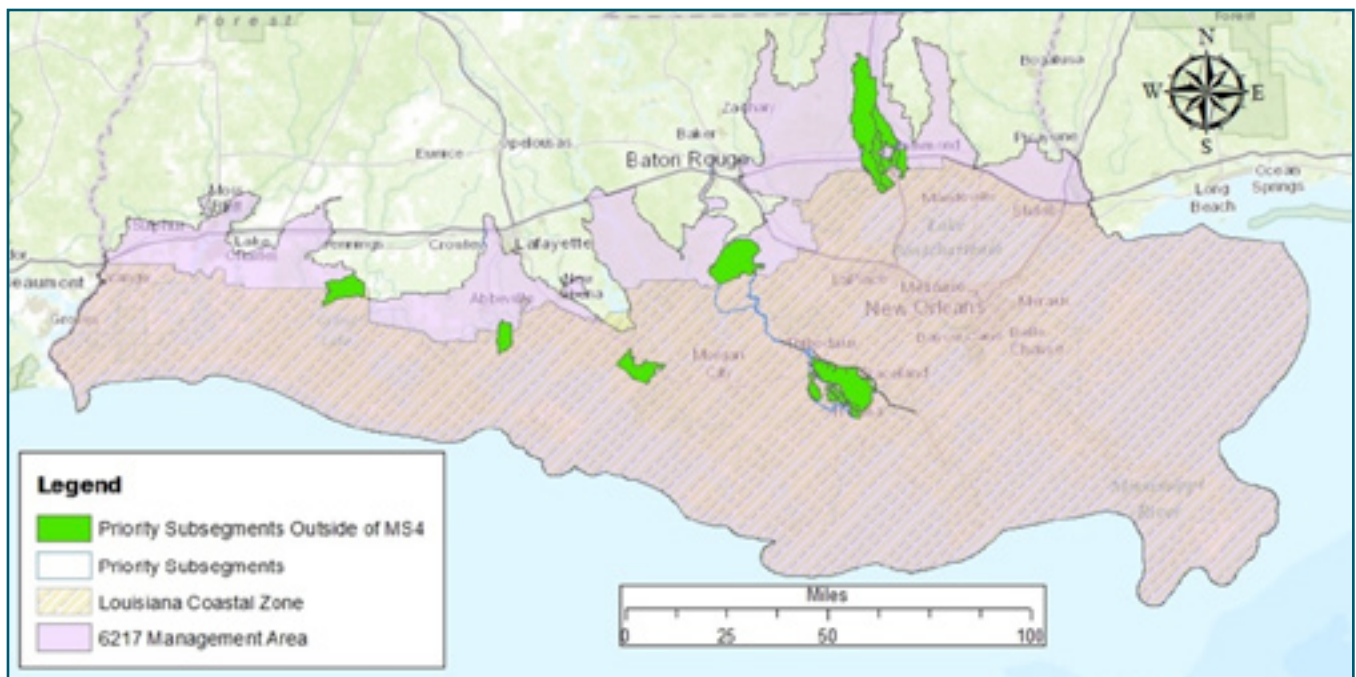


Figure 18. Priority Watershed Subsegments Located Outside of MS4 Areas

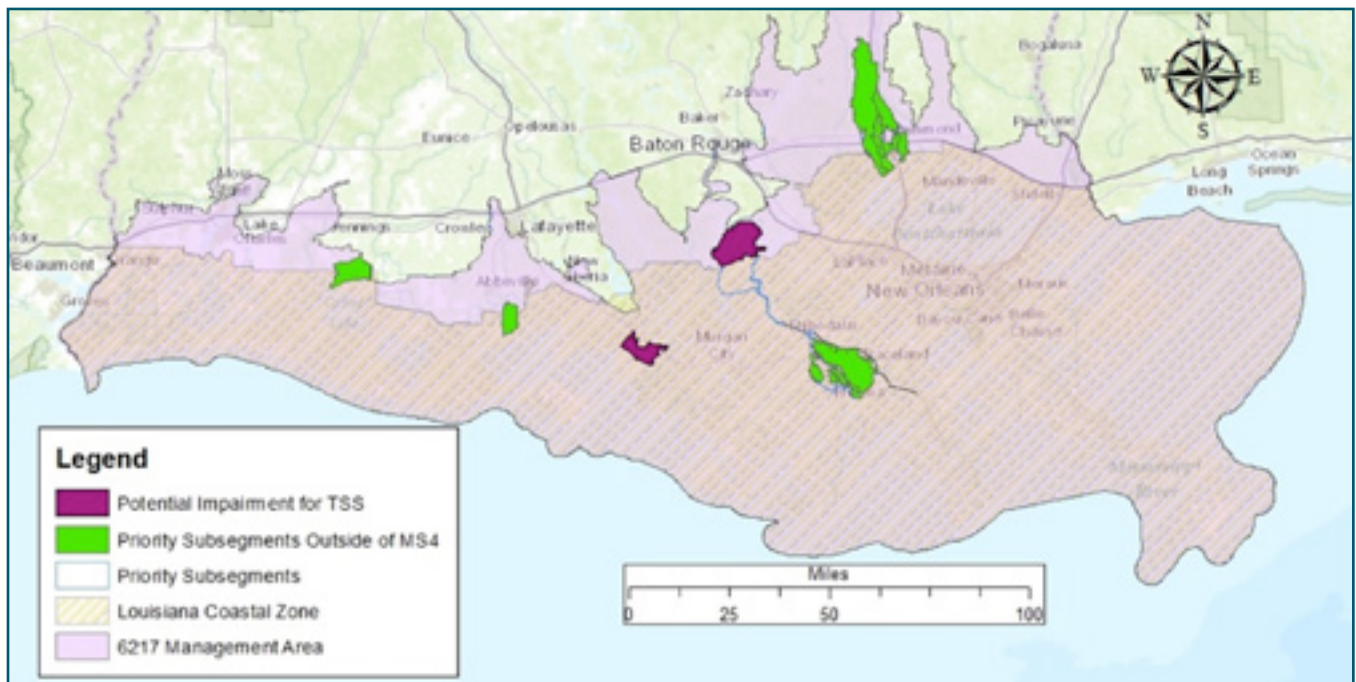


Figure 19. Potentially Impaired Areas of Interest for Total Suspended Solids

Three (3) areas of interest were identified as potentially impaired for TSS, and require further assessment. One (1) of these areas is located inside the Louisiana Coastal Zone. The other two (2) areas are located outside of the Louisiana Coastal Zone, but inside the 6217 management area.

The CNPCP overlaid roads and bridges data, provided by the LDOTD, into the analysis tool to identify a list of features in the areas of interest. The CNPCP determined areas of interest located inside the Louisiana Coastal Zone would be weighted higher than those areas outside of the Louisiana Coastal Zone and located within the 6217 management area. Additionally, the CNPCP determined the features within these areas of interest would be prioritized based on the following categories:

Category 1	Bridges inside of the Coastal Zone of Louisiana
Category 2	Bridges outside of the Coastal Zone of Louisiana
Category 3	Highways inside of the Coastal Zone of Louisiana
Category 4	Local Roadways inside of the Coastal Zone of Louisiana
Category 5	Highways outside of the Coastal Zone of Louisiana
Category 6	Local Roadways outside of the Coastal Zone of Louisiana

Table 13. Features of interest by category

Within these categories, features would then be prioritized based on length. For example, a 100 foot bridge located in the Coastal Zone would be higher on the priority list than a 50 foot bridge located in the Coastal Zone.

The list that was developed through the process referenced above provided the following features:

- Six (6) features located in Category 1, and the total length of those features is 1.28 miles of bridges,
- 15 features located in Category 2, and the total length of those features is 0.22 miles of bridges,
- 74 features in Category 3, resulting in 142 miles of roadways,
- 372 features in Category 4, resulting in 54.04 miles of roadways,
- 326 features in Category 5, resulting in 57.89 miles of roadways, and
- 780 features in Category 6, resulting in 122.599 miles of roadways.

Implementation of these priority projects would be initiated as 319 or other funding sources become available. Based upon the criteria listed above, the CNPCP developed a priority list that can be found at <http://data.dnr.la.gov/lcp/CNPCP/RHB/CATEGORIES.pdf>.

Marinas

Six (6) Additional Coastal Clean Marinas on Board in 2014

The Clean Marina Program, part of the CNPCP group, identified and certified six (6) additional coastal marinas into the Louisiana Clean Marina Program. Three (3) of the marinas are located in Terrebonne Parish, one (1) in Orleans Parish, one (1) in St. Tammany Parish, and one (1) in Plaquemines Parish. At this time, there are a total of 18 marinas located throughout coastal Louisiana that currently meet the high standards of management practices and have been awarded certification in the program. All certified marinas have voluntarily adopted environmentally responsible practices to help reduce pollution and protect coastal waters from activities at the marinas – such as maintaining vegetated areas, easements, avoiding the use of toxic lawn and garden chemicals, containing waste from maintenance and repair areas, as well as maintaining septic systems and pump-out systems. More information on the Clean Marina Program can be found on the OCM's webpage at <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=124>.



Figure 20. Venice Marina in Plaquemines Parish

Administration

The CNPCP (LDNR and LDEQ) continued to jointly coordinate their programs to implement and achieve full approval for all CNPCP management measures.

8.2 Drinking Water Protection Program

LDEQ's DWP staff implemented the following source water protection activities during this reporting period.

Note that certain activities are conducted for every parish. These routine activities are listed by parish below in bullet format along with parish-specific protection activities. Routine activities that occur in every parish include the following:

- explained the DWP program to water systems and local officials;
- developed contingency plans with water systems;
- updated source water assessment data;
- introduced a model ordinance;
- educated local businesses identified as potential sources of contamination to drinking water sources;
- conducted public education (including community meetings, school presentations, etc.)

Any of these activities not reported below were either conducted during a previous reporting period or have yet to be implemented. Also note that while only ordinances that have been passed are reported below, the DWP staff introduces a model ordinance to every governing body in each targeted parish that has public water supply wells within its jurisdiction.

Allen Parish

DWP program

- The program was initiated in June 2012.

Public supply water systems

- There are ten (10) systems in Allen Parish.

Source Water Assessment Data

- GPS data was obtained for eight (8) new public supply wells and nine (9) new potential sources of contamination by the DWP staff..

Community meeting(s)

- A community meeting was held on September 11, 2014, to inform attendees about the source of their drinking water and what they can do to protect it.

Groundwater protection ordinance

- An ordinance was adopted by the Town of Elizabeth.

Educational visits

- Twenty eight educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination to drinking water sources during this reporting period. Thirty other businesses/facilities were identified as either closed or vacant at the time of the visit.

DWP presentation(s)

- A presentation was presented to the Oakdale Rotary Club.

Ascension Parish

DWP program

- The program was initiated in August 2013.

Source water assessment data

- GPS data was obtained for one (1) new public supply well and 30 new potential sources of contamination by the DWP staff.

Educational visits

- Ninety-six educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination to drinking water sources. Forty-one other businesses/facilities were identified as either closed or vacant at the time of the visit.

DWP presentation

- DWP staff participated in a career day and later presented a presentation to East Ascension High School.

Parish specific activities

- The Parish of Ascension broadcasted the DWP program video on their government access channel, AP TV, to educate the public and promote drinking water awareness.

LDEQ awarded \$30,000 from the Beneficial Environmental Project fund for Ascension Parish to hold a Household Hazardous Waste Collection Day. The collection day took place on May 10, 2014 in the City of Gonzales. Three hundred and thirty-three vehicles passed through the line of drop off stations that accepted tires, scrap metal, batteries, electronic devices, paint and more. Parish residents dropped off 20.48 tons of household hazardous materials during the event, keeping it out of the environment.



Figure 21. LDEQ Geologist Tiffani Barth teaching the East Ascension High School Science Club where their water comes from, why it is important to protect it and how they can protect it.

Caldwell Parish

DWP program

- The program was initiated in September 2013.

Public supply water systems

- There are eleven systems in Caldwell Parish.

Source water assessment data

- GPS data was obtained for two (2) new public supply wells and two (2) new potential sources of contamination by DWP staff.

Groundwater protection Ordinance(s)

- An ordinance was adopted by the Town of Columbia.

DWP presentations

- DWP presentations

Parish specific activities

- Members of the Caldwell Parish Drinking Water Protection Committee distributed a flyer that indicated used oil recycling locations locally. This flyer was also distributed at the Caldwell Parish Farm Safety Day held April 25th.

A model spill prevention and control plan spill plan, along with several copies of the used oil fact sheet, were given to a local fuel distributor, the local Louisiana Farm Bureau office, and the local USDA office for distribution within the community.

Livingston Parish

DWP program

- The program was initiated July 2012.

Public supply water systems

- There are 45 systems in Livingston Parish.

Groundwater protection Ordinance(s)

- Ordinances were adopted by the City of Denham Springs, Village of Killian, Village of Albany, Town of Livingston and City of Walker.

DWP presentations

- DWP staff participated in a career day at Westside Junior High School.

Parish specific activity

- LDEQ awarded \$35,000 from the Beneficial Environmental Project fund for Livingston Parish to hold a Household Hazardous Waste Collection Day. The collection day took place on July 26, 2014, in the City of Walker. Three hundred and seventy-six parish residents disposed of 9.49 tons of hazardous materials, 543 gallons of waste oil, 450 gallons of paint, 347 tires, 26 propane bottles and other various materials during the event. This benefits the parish and the environment by preventing the improper disposal of these hazardous materials.

St. Mary Parish

DWP program initiated

- The program was initiated in September 2014.

Public supply water systems

- There are eleven systems in St. Mary Parish.

Source water assessment data

- GPS data was obtained by one (1) new public supply well and one (1) new public supply surface water intake and six (6) new potential sources of contamination by DWP staff.

Community meeting

- A community meeting was held on October 30, 2014, to inform attendees about the source of their drinking water and what they can do to protect it.

Lake Bruin Study – Tensas Parish

Located in Tensas Parish in northeast Louisiana, Lake Bruin is an oxbow lake of the Mississippi River known for freshwater fishing, water sports and fine outdoor living in a peaceful setting highlighted by mossy cypress trees. The lake is over 3,000 acres in size and is the source of drinking water for approximately 6,600 residents served by three (3) public water systems: Lake Bruin, the Town of Newellton Water Systems, and the Tensas Water District Association. A portion of the land beside the lake is owned by the state, which operates Lake Bruin State Park. The remainder is privately owned with many vacation homes and permanent residences, all of which utilize individual home sewage treatment systems. Local residents raised concerns that these systems could be negatively impacting the lake. LDEQ routinely collects samples from Lake Bruin at a sample location on the north side of the lake, near Newellton. Based on data from this sampling, the lake is fully supporting all water quality standards set by LDEQ. However, to specifically determine any impact of individual home sewage treatment systems, LDEQ conducted additional sampling of the lake.



Figure 22. Jesse Means (LDEQ) and James Hendrix (LSU Cooperative Extension Service) prepare for water sampling on Lake Bruin.

These samples were taken near residences, vacation homes/camps, unoccupied areas, and at various points along the centerline of the lake. Sampling was conducted prior to and following the Memorial Day holiday weekend, when vacation homes are usually occupied thus potentially increasing the sewage loading into the lake. Samples were collected at 18 locations on May 15, May 22, and May 28, 2014.

The samples were analyzed for fecal coliform and optical brighteners. Fecal coliform are bacteria that live in the intestines of warm-blooded animals and are an indicator organism for potential sewage contamination. Optical brighteners are compounds added to laundry detergents that emit light when exposed to ultraviolet light, brightening the appearance of the fabric. If sample results show high levels of fecal coliform along with high levels of optical brighteners the presence of sewage is indicated.



Figure 23. LDEQ Geologist Jesse Means prepares a field blank for a sampling event on Lake Bruin.

All samples collected were below LDEQ's primary contact recreation standard (swimming standard) of 400 colonies/100 ml for fecal coliform and were negative for optical brighteners. The May 28, 2014, sampling was conducted after Memorial Day during a rain event. It showed the highest fecal coliform level, but optical brighteners were not detected. Fecal coliform levels usually increase in most water bodies during a rain event due to runoff, which could account for the elevated levels on this date.

Based on the sample results, it does not appear that individual home sewage treatment systems are negatively impacting the water quality in Lake Bruin. However, in order to preserve the water quality of the lake, it is imperative that property owners maintain their sewage treatment systems.

A public education campaign on the proper maintenance of on-site sewage treatment systems is highly recommended. A possible long-term consideration is the establishment of a community sewage treatment system, thus eliminating the need for property owners to maintain their own systems.

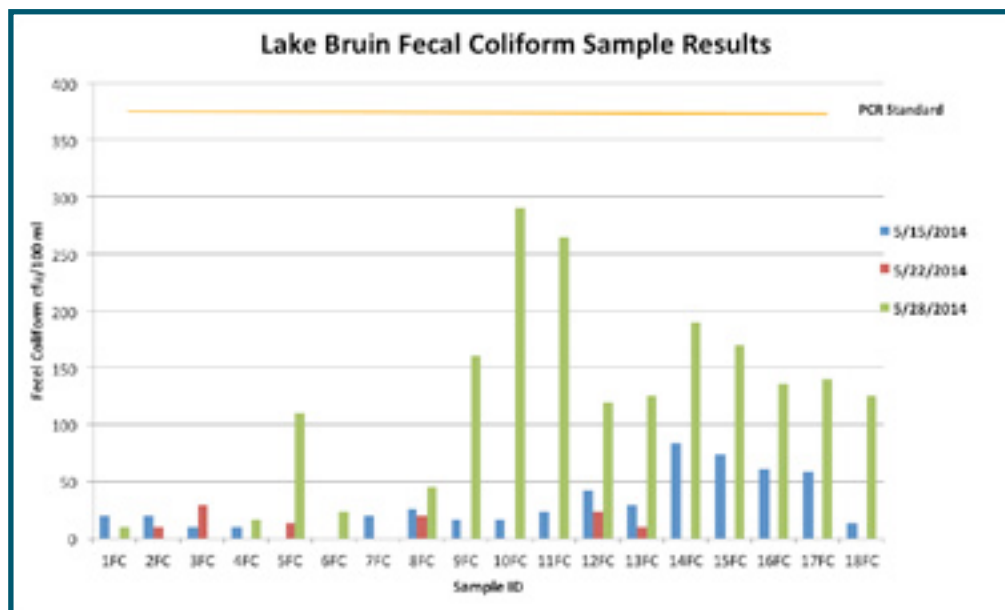


Figure 24. Fecal coliform results from three (3) sample events in May of 2014

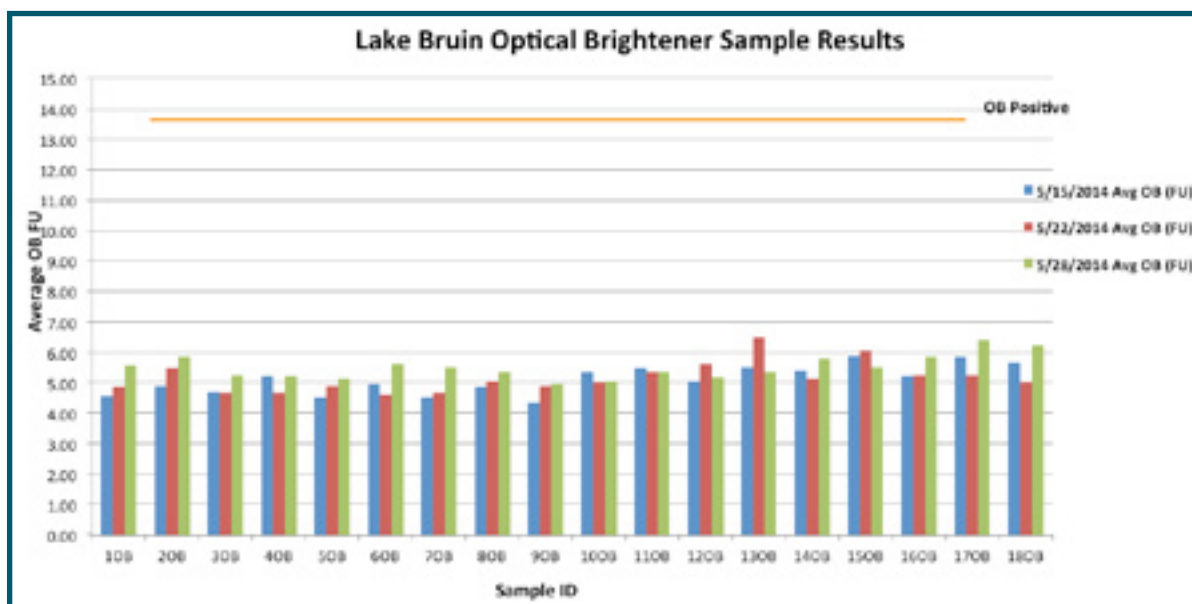


Figure 25. Optical brightener results from three (3) sample events in May of 2014

LDEQ met with the Lake Bruin Commission on August 5, 2014, to present the findings, which resulted in the information being disseminated throughout the community. A summary of the Lake Bruin study was included in the “Louisiana Drinking Water Protection Program 2014 Newsletter,” which is disseminated across the state.

8.3 Source Water Assessment Program

Data Collection and Risk Assessment

Source water risk assessments were completed for all public water supply systems between 2000 and 2003. By utilizing data collection, assessment, and automated data processing tools which were developed and implemented in 2013, LDEQ is able to collect and process new assessment data on an as needed basis. Specifically, Source Water Assessment Program (SWAP) Calculator automates the generation of new source water assessment reports based on existing data and new data collected with the SWAP Mobile data collection tool. These new tools help ensure data integrity, improve data management efficiency, and facilitate reporting to USEPA through the Grants Reporting and Tracking System (GRTS).

In 2014, new source water assessment data was collected in four (4) DWP program target parishes and in four (4) non-target parishes, utilizing SWAP Mobile. As a result, more than 100 source water assessment reports were generated with the SWAP Calculator. These new reports, and the data used to generate them, are used by DWP staff and citizen volunteers when performing visits to businesses that are potential sources of contamination to inform them of the potential impact on their drinking water source.

8.4 Statewide Individual Home Sewage System Program

Many of Louisiana's watershed impairments are caused by high concentrations of fecal coliform bacteria. The state's numerical criteria for fecal coliform bacteria for designated uses are as follows:

Designated Use	Louisiana numerical criteria
Primary Contact Recreation	fecal coliform bacteria: 400 cells/100 mL
Secondary Contact Recreation	fecal coliform bacteria: 2000 cells/100 mL
Public Water Supply	fecal coliform bacteria: 2000 cells/100 mL
Oyster Propagation	fecal coliform bacteria: 14 cells/100 mL

Table 14. Louisiana's standard criteria for fecal coliform

LDEQ and WSCs partner with LDHH and the parish and/or local governments in developing education and outreach programs and assist in inspecting individual home sewage systems located in critical watershed areas. In FFY 2014, the following 319 funded projects were focused on accomplishing this goal:

Calcasieu Parish Police Jury Inspection Project

Start to End Dates

- June 1, 2011 to November 30, 2014

Watershed(s)

- Marsh Bayou (030603), Hickory Branch (030802), Contraband Bayou (030305) and Indian Bayou (030805)

Number of systems to inspect

- 33,000 systems

Number of Systems Repaired

- 6,551 systems

Results

- An estimated 1.6 MGD of previously contaminated effluent removed from the watersheds.

Yellow Water River Watershed Inspection Project

Inspections conducted by Capital RC&D and LPBF

Start to End Dates

- October 1, 2013-September 30, 2014

Watershed(s)

- Yellow Water River (040504)

Number of Systems Inspected

- 571

Number of Systems Repaired

- 186

Results

- An estimated 3.5 MGD of previously contaminated effluent removed from the watershed

Selsers Creek Watershed Inspection Project

Inspections conducted by Capital RC&D and LPBF

Start to End Dates

- October 1, 2013-September 30, 2014

Watershed(s)

- Selsers Creek (040603)

Number of Systems Inspected

- 419

Number of Systems Repaired

- 34

Results

- An estimated 646,000 GPD of previously contaminated effluent removed from the watershed

Ponchatoula Creek Watershed Inspection Project

Inspections conducted by Capital RC&D and LPBF

Start to End Dates

- October 1, 2013-September 30, 2014

Watershed(s)

- Ponchatoula Creek (040505)

Number of systems Inspected

- 558

Number of Systems repaired

- 45

Results

- An estimated 855,000 GPD of previously contaminated effluent removed from the watershed

In FFY 2015, the following individual home sewage system inspection projects are proposed:

Watershed	Project Summary
Tunica Bayou	Contracts will be issued to Capital RC&D to conduct monitoring and individual home sewage system inspections.
Big Creek	Contract is being revised for Capital RC&D to conduct individual home sewage system inspections. LDEQ is currently monitoring.
Indian Bayou	Special Grant in FFY 2014 allocated to LDEQ. LDEQ will monitor watershed and a contract will be issued to Calcasieu Parish to complete the individual home sewage system inspections.
Natalbany River	A contract will be issued to LPBF to complete the monitoring and individual home sewage system inspections.
Upper Bayou Terrebonne	A contract has been issued in FFY 2014 to Bayou Land RC&D to complete the monitoring and individual home sewage system inspections.

Table 15. Proposed individual home sewage system project for FFY 2015

These projects require support and involvement from local governments to be successful. The inspectors are funded by Section 319 funds. They must be deputized by the local government in order to conduct inspections on private property. A list of permitted systems is provided by LDHH. A map is generated of the sites of these systems. An inspection is conducted at each site. The inspection includes the following: homeowner notification and contact information, location of the system, type of system, motor operating status, location of tanks, and conduction of a sludge test. The inspector will leave a tag notifying the homeowner of results (green tag for passed, yellow tag indicating system could not be found and a red tag for failed).

In FFY 2014, LDEQ partnered with LDHH and ULL to develop a homeowner certification class geared at educating homeowners on the operation and maintenance of their individual home sewage systems. The

classes will be provided several times in each area of the state where individual home sewage inspection projects are being conducted. The classes will be funded by Section 319 funds.

In addition, LDEQ and LDHH are partnering to develop a software program for inspectors to use in the field to automate the process. LDEQ will be providing each inspector with a touch screen tablet containing the software program. The program will pull a list of individual home sewage systems per watershed from LDHH's database. The inspectors will complete the inspection reports on the tablets and submit them to LDHH electronically. LDEQ staff will assist in mapping the progress of the inspections.

Bayou Lafourche Sewage Project – Ascension, Assumption, Lafourche & Terrebonne Parish

Bayou Lafourche in south Louisiana is the source of drinking water for six (6) public water systems serving a population of over 200,000. It is not meeting its PCR standard due to elevated levels of fecal coliform. In an effort to reduce the fecal coliform LDEQ has identified locations contributing sewage to the bayou by means of a sampling project conducted by Nicholls State University (NSU). In 2014, LDEQ continued to address the findings of the NSU project.

LDEQ coordinated with the LDHH and the Barataria-Terrebonne National Estuary Program (BTNEP) on a repair/replacement project for malfunctioning individual home sewage treatment systems. This project targets individual home sewage treatment systems that contribute untreated sewage to Bayou Lafourche at the locations identified by the NSU project. During this reporting period LDHH completed inspections at two (2) of the locations, identifying two (2) properly functioning systems and 17 systems that were out of compliance. Two of the systems were repaired while efforts to repair or replace the remaining systems are ongoing. LDHH is following up with enforcement actions and BTNEP will provide funding, as needed. Additional individual home sewage system inspections at other areas identified by the NSU project are planned and BTNEP has agreed to provide more funding.

LDEQ, the City of Donaldsonville and the Louisiana Rural Water Association (LRWA) worked together to locate the source of sewage in a ditch in Donaldsonville. LDEQ conducted sampling within the storm drain system upstream of the ditch. Sample results showed very high fecal coliform counts and optical brighteners. A smoke test revealed a leak in a manhole which could potentially impact the storm drain system that leads to the ditch. A further effort to pinpoint the exact location of the leak is underway with the expectation that repairs will be made, thus keeping sewage from reaching Bayou Lafourche at this location.

LDEQ worked with the engineer for Assumption Parish to locate the source of sewage in a storm drain in Napoleonville. The LRWA sent a camera into the storm drain system and found where sewage is entering into it. The next phase of work will entail excavation around this portion of the storm drain working back to where the leaking sewage line is located. LDEQ is assisting the parish to secure funding sources to assist with repairs at this location.



Figure 26. LDEQ Geologist Jesse Means at the smoke test in Donaldsonville that was conducted to pinpoint a source of sewage getting into Bayou Lafourche.

LDEQ inspected all non-residential facilities that could contribute improperly treated sewage to the locations identified by the NSU study. Subsequent to this, LDEQ conducted additional sampling in two (2) ditches in Paincourtville to determine the effectiveness of inspections and sewerage system maintenance of surrounding commercial sewage treatment systems on mitigating sewage entering the ditches. Sampling results revealed the continued presence of sewage. LDEQ will make an effort to have nearby residential sewage systems inspected. Additional sampling of other locations identified by NSU will be conducted.

In addition, a follow up investigation was made by LDEQ on a ditch in the City of Mathews that contained evidence of sewage. It was discovered that the source of sewage is a community treatment system for a nearby subdivision. LDEQ currently has ongoing enforcement action on this sewage treatment system.

As progress is made, it is anticipated that larger, more densely populated areas will be targeted for sewage mitigation, requiring increased funding. LDEQ, LDHH and BTNEP continue applying for funding sources during this reporting period.



9.0 Appendix

2014 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM

Statewide Milestones for Water Quality Improvement	2013
Number of water bodies identified in LA's 1998/2000 IR or subsequent years as being primarily NPS impaired that are partially or fully-restored (WQ-10): Identify fully restored water bodies in Appendix C of state's IR primarily impaired by NPS pollutants in 1999 court ordered 303(d) list or 1998/2000 IR; review NPS related activities in watershed where water body was restored; write NPS success story; and identify activities to maintain water quality.	3
Estimated annual reductions in million of pounds of nitrogen from NPS to water bodies (from Section 319 funded projects) (WQ-9a): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report.	324,478
Estimated annual reductions in million of pounds of phosphorus from NPS to water bodies (from Section 319 funded projects) (WQ-9b): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of phosphorus; and include information in NPS annual report.	113,961
Estimated annual reductions in million of Pounds of Sediment from NPS to Water bodies (from Section 319 funded projects) (WQ-9c): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of sediment: include information in NPS annual report.	39,576
Number of NPS impairments removed from LA's IR: Annually review state IR for NPS impairments (DO, fecal coliform bacteria, TSS, etc.) removed as a result of NPS activities and include information in NPS annual report. Compare the previous IR to the current IR. Number is based on the 2012 IR.	1
Progress in reducing unliquidated obligations (ULO): Percentage of ULO funds anticipated yearly for both LDEQ and LDAF combined (total remaining funds/total awarded = percentage ULO).	.54%

Notes

[illegible]

